

No: 2024-2256

UNITED STATES COURT OF APPEALS FOR THE FEDERAL CIRCUIT

LARRY GOLDEN
Plaintiff-Appellant

v.

The United States
Defendant-Appellee

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United States Court of Appeals
For the Federal Circuit

ON APPEAL FROM THE UNITED STATES COURT OF
FEDERAL CLAIMS IN GOLDEN v. THE UNITED STATES
[DEFENSE THREAT REDUCTION AGENCY]
IN 1:2023cv00811-EGB; JUDGE ERIC BRUGGINK

**PLAINTIFF-APPELLANT'S REPLY IN SUPPORT OF PLAINTIFF-
APPELLANT'S CROSS-MOTION TO STRIKE [12] DEFENDANT-
APPELLEE'S MOTION FOR SUMMARY AFFIRMANCE [9]**

LARRY GOLDEN, *Pro Se*
740 Woodruff Rd., #1102
Greenville, S.C. 29607
(864-288-5605)
Atpg-tech@charter.net

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FRCP Rule 12(f); Motion to Strike: “The court may strike from a pleading an insufficient defense or any redundant, immaterial, impertinent, or scandalous matter.”

This reply document in support of Golden’s motion to strike *[Doc. No. 12]* the Government’s motion for summary affirmance *[Doc. No. 9]* outlines in comparison details how the issues of the previous case are not identical to the issues of the current case; how issues of the previous case that appears as factual issues in the current case was never adjudicated and a final judgement never reached; and, how the misconduct of the CFC Judge was intentional and deliberate, resulting in a personal bias against Golden and in favor of the Government.

The doctrine of *Jes Judicata* [issue preclusion] prevents relitigation of factual issues already decided “if the identical issue was determined by a prior final judgment, and the party estopped had a fair opportunity and incentive to litigate the issue in a prior proceeding.” *Portland Water Dist.*, 940 A.2d at 1100 (citation omitted).

Courts have long abided the “unremarkable principle” that “[c]laims arising subsequent to a prior action ... are not barred by *res judicata* regardless of whether they are premised on facts representing a continuance of the same ‘course of conduct.’” *Storey v. Cello Holdings, L.L.C.*, 347 F.3d 370, 383 (2d Cir. 2003); see also *Lawlor v. Nat’l Screen Serv. Corp.*, 349 U.S. 322, 328 (1955) (earlier judgment “cannot be given the effect of extinguishing claims which did not even then exist and which could not possibly have been sued upon in the previous case.”).

This principle has proven particularly appropriate in cases involving continuing torts, where each successive injury generates an independent cause of action. As the Supreme Court instructed long ago: “That both suits involved ‘essentially the same course of wrongful conduct’ is not decisive. Such a course of conduct—for example, an abatable nuisance—may frequently give rise to more than a single cause of action.” *Lawlor*, 349 U.S. at 327-28.

The Supreme Court on when the Government goes too far. “When the government, rather than appropriating private property for itself or a third party, instead imposes regulations that restrict an owner’s ability to use his own property, a different standard applies. *Id.*, at 321–322. Our jurisprudence governing such use restrictions has developed more recently. In *Pennsylvania Coal Co. v. Mahon*, 260 U.S. 393 (1922), however, the Court established the proposition that “while property may be regulated to a certain extent, if regulation goes too far it will be recognized as a taking.” *Id.*, at 415.

The CFC Judge and DOJ Attorney have crossed the edge of regulation into a “*taking*”.

NON-IDENTICAL ISSUES; ISSUES NOT DECIDED ON THE MERITS; AND SUBSEQUENT FACTS PERMIT PLAINTIFF TO LITIGATE THE DISTINCT FACTUAL ISSUES OF THE CURRENT CASE		
Previous Case: <i>Golden v. US</i> CFC Case No. 13-307C	Current Case: <i>Golden v. US</i> CFC Case No. 23-811C	
United States Department of Homeland Security's Science and Technology Directorate Broad Agency Announcement 07-10 <i>Cell-All Ubiquitous Chemical and Biological Sensing</i> (DHS S&T "Cell-All") <i>(Exhibit A)</i>	United States Department of Defense's Defense Threat Reduction Agency Android Tactical Assault Kit Chemical, Biological, Radiological, and Nuclear Plug-in Sensors (DoD DTRA-ATAK CBRNE) <i>(Exhibit B)</i>	United States Department of Defense's Joint Program Executive Office for Chemical, Biological, Radiological, and Nuclear Defense (DoD JPEO-CBRND) <i>(Exhibit C)</i>
The CPU is considered the "brains" of the <i>Cell-All</i> mobile device manufactured by or for the Government. Qualcomm was tasked with the responsibility of developing the CPU for the <i>Cell-All</i> initiative. Qualcomm was not compelled by the CFC to appear and defend its interest. The CFC Court ordered Golden to identify the CPU as an element found inside the Apple device, and when Golden did, the CFC Court lied and dismissed the case because the Court claims identifying the CPU was an enlargement of the case. The CFC Court also lied and said Golden identified the CPU as a sensor for detecting CBRNE. Golden never presented his patented CPU in this previous case and after lying about the CPU as an element the CFC dismissed the case for improper reasons. Golden's CPU as his patented invention was never adjudicated on the merits, and therefore did not receive a final judgement on the merits. <i>(Exhibit A: Qualcomm, not Apple)</i>	In this current case Golden asserted as new, Ind. claims 1 & 11, and Dep. claims 2-10 & 12-20 of his '619 patent for his patented CPU invention. The CPU is considered an article of manufacture for Golden's patented cell phone; and the Mobile Operating System is considered an article of manufacture for Golden's patented CPU. An "article of manufacture," as used in §289, encompasses both a product sold [Golden's patented CPU], and a component [mobile operating system] of that product. ("Section 171 authorizes patents [] for articles of manufacture. While the design must be embodied in some articles, the statute is not limited to designs for complete articles, or 'discrete' articles, and certainly not to articles separately sold . . ."). Zahn, 617 F. 2d 261, 268 (CCPA 1980) [such as the mobile operating systems]. Under this initiative the ATAK is built on the Google Android Open-Source Operating System that is integrated with Golden's patented CPU. In the final judgement of the previous case Golden's patented CPU was never considered.	Also, in this current case Golden asserted as new, Ind. claim 1, of his '898 patent for his patented Pre-Programmed Stall, Stop, or Vehicle Slowdown System "CPU" invention. This initiative is an expansion of the DoD DTRA-ATAK CBRNE initiative. The CPU is considered an article of manufacture for Golden's patented Pre-Programmed Stall, Stop, or Vehicle Slowdown System invention. Golden's asserted as new his patented Pre-Programmed Stall, Stop, or Vehicle Slowdown System as a limitation [element] in Ind. claims 1 & 11 of Golden's '619 patent. Golden's patented central processing unit (CPU) for mobile devices, and Golden's patented Pre-Programmed Stall, Stop, or Vehicle Slowdown System was never available for adjudication in the previous case. Therefore, the inventions were not decided in a final judgement on the merits; which means they cannot be dismissed under the doctrines of Issue Preclusion or Kessler.

<p>The United States Department of Homeland Security (DHS) is the U.S. federal executive department responsible for public security, The Science and Technology Directorate's (S&T's) Chem-Bio (CB) Detection program conducts research to assess, prevent, detect, prepare for, respond to, and recover from incidents involving CB threats and hazards. Spearheaded by the Department of Homeland Security's (DHS) Science and Technology Directorate (S&T), BAA07-10; <i>Cell-All Ubiquitous Chemical & Biological Sensing</i> initiative aims to equip your cell phone with a sensor capable of detecting deadly chemicals ... "Our goal is to create a light-weight, cost-effective, power-efficient solution," says Stephen Dennis, Cell-All's program manager: In 2007, S&T called upon the private sector to develop concepts of operations: Qualcomm (engineers specialize in sensor miniaturization), NASA (chemical sensing on low powered platforms), and Rhevision (camera sensing) Technology. (Exhibit A: Qualcomm, not Apple)</p>	<p>The United States Department of Defense (DoD) is an executive branch department of the federal government charged with coordinating and supervising all agencies and functions of the U.S. government directly related to national security and the United States Armed Forces. The Defense Threat Reduction Agency (DTRA) is both a defense agency and a combat support agency within the DoD for countering WMD; CBRNE. The Android Team Awareness Kit, (ATAK) is a digital application available to war-fighters throughout the DoD. Built on the Android operating system, ATAK offers geospatial mapping for situational awareness on an end-user device such as a smartphone or a tablet. ATAK provides a single interface for viewing and controlling different CBRN-sensing technologies, whether that is a wearable smart-watch that measures a warfighter's vitals (e.g., heart rate) or a device mounted on a drone to detect chemical warfare agents. Different executive branch departments; different sub-agencies; with different CBRNE sensing rationales from the previous case.</p>	<p>The United States Department of Defense (DoD) is an executive branch department of the federal government. The Joint Program Executive Office for Chemical, Biological, Radiological, and Nuclear Defense (JPEO-CBRND) is a component of the U.S. Department of Defense's Chemical and Biological Defense Program, the JPEO-CBRND protects the entire Joint Force – Army, Navy, Air Force, Marines, Coast Guard, and First Responders – through the advanced development of CBRN defense capabilities. The U.S. Department of Defense (DOD) to further expand the capabilities of its unmanned autonomous systems (UAS) software to perform chemical, biological, radiological and nuclear (CBRN) reconnaissance missions in collaborative teams and in degraded operating environments. Different executive branch departments; different sub-agencies; with different CBRNE sensing rationales from the previous case, which means the case cannot be dismissed under the doctrines of Issue or Claim Preclusion, or Kessler.</p>
<p>Golden's patented lock-disabling mechanism invention that locks the mobile device after several failed attempts to unlock, was not requested by the DHS S&T <i>Cell-All</i> initiative. The DOJ's Attorney altered the initiative to include the locking mechanism and the CFC Court ordered Golden to identify in the Apple devices where the locking mechanism is found. 12 patent claims asserted in the case included the locking mechanism, as an element to be located in the accused devices. When Golden located the locking mechanism in the accused Apple devices, the CFC Court outright lied and said Golden did not.</p>	<p>In this current case The United States Department of Defense (DoD); The Defense Threat Reduction Agency (DTRA); Android Team Awareness Kit, (ATAK); CBRNE Initiative is not requesting a locking mechanism. [Golden's patented locking mechanism]. If the DOJ's Attorney is again allowed to altered the Gov't initiative to included or exclude the locking mechanism, Golden is prepared to locate in the accused devices where the locking mechanism can be found; and also, for the first time to assert in this current case at least Ind. claim 2 of Golden's '287 patent. For the mobile device.</p>	<p>In this current case The United States Department of Defense (DoD); Joint Program Executive Office for Chemical, Biological, Radiological, and Nuclear Defense (JPEO-CBRND) Initiative is not requesting a locking mechanism. [Golden's patented locking mechanism]. If the DOJ's Attorney is again allowed to altered the Gov't initiative to included or exclude the locking mechanism, Golden is prepared to locate in the accused devices where the locking mechanism can be found; and also, for the first time to assert in this current case at least Ind. claim 3 of Golden's '287 patent. For the vehicle.</p>

The *Cell All* project is a multi-phased RDT&E project that began as a proof of concept (phase I). Phase I of the program consisted of the research and development of a suite of chemical sensors (e.g., carbon monoxide, ethanol, chlorine, and toluene).

The DHS S&T *Cell-All* initiative led to the creation of six workable first-generation prototypes with chemical sensors located *inside* devices; including a “form factor phone” developed by Qualcomm and a chemical nanosensor device developed by NASA. The second-generation prototypes, chemical sensors were *separated from the phones*, allowing for initial market deployment of the sensors through third-party products, to be added to existing phones (DHS, 2011a).

In the previous case *Golden v. US* CFC No.13-307C, the final judgement was Golden failed to comply with the Court’s order to locate *within* the Apple device where the sensor for CBR detection can be found. The CFC Judge narrowed this case to a case between two private entities [Golden and Apple], therefore the Judge cannot change what the Court considers was adjudicated on the merits. The Judge ordered Golden to identify sensors that was only “*inside*” the Apple device, and only “*native*” to the manufacture of the Apple product. In doing so the Judge shifted away from the scheme of the *Cell-All* initiative; and that is to combine the contributions of eight entities, Qualcomm, NASA, Synkera, SeaCoast, Rhevision, Apple, LG, and Samsung to develop the *Cell-All* Sensing device. “[O]nly “*inside*” the Apple device, and only “*native*” to the manufacture of the Apple product”, is the only thing that may be considered under issue preclusion. (**Exhibit A: Qualcomm, not Apple**)

Built on the Android operating system, ATAK offers warfighters geospatial mapping for situational awareness during combat — on an end-user device such as a smartphone or a tablet. ATAK can connect to sensors on many platforms (e.g., drones, smartwatches)

A plug-in adds functionality to the existing ATAK software app. that was not present before. Draper Lab is adding the CBRNE sensors as plug-ins to the existing DTRA ATAK software. The DTRA ATAK software provides a way to integrate the CBRNE plug-in sensors. The plug-in architecture is the best way to add the CBRNE sensors to a system that was not initially designed to support it. The CBRNE plug-ins sensors extensions to the existing ATAK app.

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<p>Golden is not “precluded” from asserting claim 1 of Golden’s ‘619 patent, issued on 04/20/21 for Golden’s CMDC device, comprising; a CPU; capable of CBRNE detection; and capable of stalling or stopping a vehicle”. Claim 1 of Golden’s ‘619 patent that was never asserted in the previous case <i>Golden v. US COFC</i> Case No. 13-307C, and cannot be dismissed for issue preclusion.</p> <p>Golden is not “precluded” from asserting claim 11 of Golden’s ‘619 patent, issued on 04/20/21 for Golden’s CPU; integrated with a CMDC device: capable CBRNE detection; and capable of processing instructions for stalling or stopping a vehicle”. Claim 11 of Golden’s ‘619 patent that was never asserted in the previous case <i>Golden v. US COFC</i> Case No. 13-307C, and cannot be dismissed for issue preclusion.</p> <p>Golden is not “precluded” from asserting claim 1 of Golden’s ‘898 patent, issued on 05/09/23 for Golden’s “a pre-programmed stall, stop, vehicle slow-down system; comprising a CMDC device: a CPU; and capable of processing instructions stall or stop when CBRNE is detected”. Claim 1 of Golden’s ‘898 patent that was not issued before the close of the previous <i>Golden v. US</i> No. 13-307C on 11/10/21, and cannot be dismissed for issue preclusion.</p> <p>Golden is not “precluded” from asserting claim 6 of Golden’s ‘287 patent that was issued 12/25/18 for Golden’s combined inventions of “[] monitoring equipment, comprising; CMDC device; a CPU; capable of CBRNE detection; and capable of stalling or stopping a vehicle”. The combination was never considered and therefore cannot be dismissed for issue preclusion.</p>	<p>Golden is not “precluded” from asserting claim 1 of Golden’s ‘619 patent, issued on 04/20/21 for Golden’s CMDC device, comprising; a CPU; capable of CBRNE detection; and capable of stalling or stopping a vehicle”. Claim 1 of Golden’s ‘619 patent that was never asserted in the previous case <i>Golden v. US COFC</i> Case No. 13-307C, and cannot be dismissed for issue preclusion.</p> <p>Golden is not “precluded” from asserting claim 11 of Golden’s ‘619 patent, issued on 04/20/21 for Golden’s CPU; integrated with a CMDC device: capable CBRNE detection; and capable of processing instructions for stalling or stopping a vehicle”. Claim 11 of Golden’s ‘619 patent that was never asserted in the previous case <i>Golden v. US COFC</i> Case No. 13-307C, and cannot be dismissed for issue preclusion.</p> <p>Golden is not “precluded” from asserting claim 1 of Golden’s ‘898 patent, issued on 05/09/23 for Golden’s “a pre-programmed stall, stop, vehicle slow-down system; comprising a CMDC device: a CPU; and capable of processing instructions stall or stop when CBRNE is detected”. Claim 1 of Golden’s ‘898 patent that was not issued before the close of the previous <i>Golden v. US</i> No. 13-307C on 11/10/21, and cannot be dismissed for issue preclusion.</p> <p>Golden is not “precluded” from asserting claim 6 of Golden’s ‘287 patent that was issued 12/25/18 for Golden’s combined inventions of “[] monitoring equipment, comprising; CMDC device; a CPU; capable of CBRNE detection; and capable of stalling or stopping a vehicle”. The combination was never considered and therefore cannot be dismissed for issue preclusion.</p>	<p>Golden is not “precluded” from asserting claim 1 of Golden’s ‘619 patent, issued on 04/20/21 for Golden’s CMDC device, comprising; a CPU; capable of CBRNE detection; and capable of stalling or stopping a vehicle”. Claim 1 of Golden’s ‘619 patent that was never asserted in the previous case <i>Golden v. US COFC</i> Case No. 13-307C, and cannot be dismissed for issue preclusion.</p> <p>Golden is not “precluded” from asserting claim 11 of Golden’s ‘619 patent, issued on 04/20/21 for Golden’s CPU; integrated with a CMDC device: capable CBRNE detection; and capable of processing instructions for stalling or stopping a vehicle”. Claim 11 of Golden’s ‘619 patent that was never asserted in the previous case <i>Golden v. US COFC</i> Case No. 13-307C, and cannot be dismissed for issue preclusion.</p> <p>Golden is not “precluded” from asserting claim 1 of Golden’s ‘898 patent, issued on 05/09/23 for Golden’s “a pre-programmed stall, stop, vehicle slow-down system; comprising a CMDC device: a CPU; and capable of processing instructions stall or stop when CBRNE is detected”. Claim 1 of Golden’s ‘898 patent that was not issued before the close of the previous <i>Golden v. US</i> No. 13-307C on 11/10/21, and cannot be dismissed for issue preclusion.</p> <p>Golden is not “precluded” from asserting claim 6 of Golden’s ‘287 patent that was issued 12/25/18 for Golden’s combined inventions of “[] monitoring equipment, comprising; CMDC device; a CPU; capable of CBRNE detection; and capable of stalling or stopping a vehicle”. The combination was never considered and therefore cannot be dismissed for issue preclusion.</p>
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In 2007, S&T called upon the private sector to develop concepts of operations. To this end, three teams from Qualcomm, the NASA, and Rhevision Technology are perfecting their specific area of expertise. Qualcomm engineers specialize in miniaturization and know how to shepherd a product to market. Scientists from the Center for Nanotechnology at NASA's Ames Research Center have experience with chemical sensing on low-powered platforms, such as the International Space Station. And technologists from Rhevision have developed an artificial nose—a piece of porous silicon that changes colors in the presence of certain molecules, which can be read spectrographically ... Similarly, S&T is pursuing what's known as co-operative research and development agreements with four cell phone manufacturers: Qualcomm, LG, Apple, and Samsung. These written agreements, which bring together a private company and a government agency for a specific project, often accelerate the commercialization of technology developed for government purposes. *The Department of Homeland Security's (DHS) 2007.*

Also, included as third-party contractors for sensor development are SeaCoast, and Synkera; and as subcontractor to NASA is Genel for Phase II sensors remote the cell phone. Rhevision's also provided a cell phone camera sensor for CBR sensing. NC4 for monitoring and data transfer.

The CFC Judge narrowed this case to a case between two private entities [Golden and Apple], therefore the Judge cannot change, to whom, and to what, the Court considers was adjudicated as a final judgement on the merits. **(Exhibit A: Qualcomm, not Apple)**

After the close of the previous case *Golden v. US* no. 13-307C on 11/10/21, the Federal Circuit in *Larry Golden v. Google LLC*; Case No. 22-1267 examined and determined on 09/08/22; how the Google "smartphone", that include the DTRA ATAK software and Draper's CBRN plugin sensors combination allegedly infringe Golden's patents: "Mr. Golden's complaint includes a detailed claim chart mapping features of an accused product, the Google Pixel 5 Smartphone, to independent claims from U.S. Patent Nos. 10,163,287, 9,589,439, and 9,069,189 ... It attempts [] to map claim limitations to infringing product features, and it does so in a relatively straightforward manner ... [W]e conclude that the district court's decision in the Google case is not correct with respect to at least the three claims mapped out in the claim chart. Mr. Golden has made efforts to identify exactly how the accused products meet the limitations of his claims in this chart...."

Nine judges, six from the Federal Circuit and three from the NDC Court, who reviewed the Google case after the close of the previous case on 11/10/21, acknowledged the "U.S. Gov't", the single entity under § 1498 for direct infringement, is more likely than not, the direct infringer because the element-by-element requirement is only satisfied under 28 USC § 1498 when Golden's entire patented invention combinations are made and is "suitable for use".

While Google is not Apple, but likewise is a single entity, this current case does not restrict or restrain Golden to identifying the sensing functionality "[O]nly 'inside' the Google device, and only 'native' to the manufacture of the Google product". Which means this case is not precluded.

After the close of the previous case *Golden v. US* no. 13-307C on 11/10/21, the Federal Circuit in *Larry Golden v. Google LLC*; Case No. 22-1267 examined and determined on 09/08/22; how the Google "smartphone", that include the DTRA ATAK software and Draper's CBRN plugin sensors combination allegedly infringe Golden's patents: "Mr. Golden's complaint includes a detailed claim chart mapping features of an accused product, the Google Pixel 5 Smartphone, to independent claims from U.S. Patent Nos. 10,163,287, 9,589,439, and 9,069,189 ... It attempts [] to map claim limitations to infringing product features, and it does so in a relatively straightforward manner ... [W]e conclude that the district court's decision in the Google case is not correct with respect to at least the three claims mapped out in the claim chart. Mr. Golden has made efforts to identify exactly how the accused products meet the limitations of his claims in this chart...."

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While Google is not Apple, but likewise is a single entity, this current case does not restrict or restrain Golden to identifying the sensing functionality "[O]nly 'inside' the Google device, and only 'native' to the manufacture of the Google product". Which means this case is not precluded.

In the previous case Golden alleged the Apple smartwatch infringes at least claim 19 of Golden's '439 patent: "A multi-sensor detection system for detecting at least one explosive, nuclear, contraband, chemical, biological, human, radiological agent, or compound, comprising: a plurality of sensors ... capable of being disposed within, on, upon or adjacent a [] detection device.

Homeland Security's Smartwatch Will Detect Nuclear Bombs
<https://www.popular-mechanics.com/military/research/a18161/homeland-security-smartwatch-detect-nuclear-bombs/>

The US Military's Latest Wearables [Smart Watch] Can Detect Illness Two Days Before You Get Sick <https://www.defenseone.com/technology/2020/09/militarys-latest-wearables-can-detect-illness-two-days-you-get-sick/168664/>

Studies reveal smartwatch biometrics can detect COVID-19: "smartwatches and other wearables measuring biometrics like heart-rate variability have the ability to detect if a person is COVID-19 positive" <https://www.biometricupdate.com/202101/studies-reveal-smartwatch-biometrics-can-detect-covid-19-before-symptoms-surface>

Golden asserted Apple's smartwatch for two reasons: 1) to satisfy Phase II of the Cell-All initiative of a sensing capability separate from the phone; and 2) a sensing capability that is "native" to, and interconnected to the manufacture of the Apple product.

The CFC Judge did not accept the smartwatch and dismissed the case for failure to comply with a Court order of locating the sensing function "internal" Apple's device

"Built on the Android operating system, ATAK offers warfighters geospatial mapping for situational awareness during combat — on an end-user device such as a *smart-phone* or a *tablet*. Warfighters can now use ATAK to guide themselves to safety when confronted with a release of *chemical and biological agents and radiological and nuclear threats* (CBRN).

ATAK can connect to [Draper's] sensors on many platforms (e.g., satellites, *drones*, *smartwatches*) and has many plugins that warfighters can download to customize their operating environment, depending on their role or mission. ATAK's *software architecture* allows [Draper's] plug-ins to share information with other plug-ins or applications on the end-user's device. With DTRA's contribution, ATAK now includes these three CBRN plug-ins: 1) CBRN Effects, 2) CBRN, and 3) Filter Times. The CBRN Effects plug-in also makes use of an existing ATAK [Draper] plug-in, the *Vehicle Navigation System (VNS)*. With Vehicle Navigation System (VNS), the CBRN Effects plug-in offers warfighters a complex routing tool that accounts for contamination and exposure. ATAK provides a single interface for viewing and controlling different CBRN-sensing technologies, whether that is a wearable *smartwatch* that measures a warfighter's vitals (e.g., heart rate) or a device mounted on a *drone* to detect chemical warfare agents." <https://www.dvidshub.net/news/367459/atak-field-forging-tactical-edge>

Golden is not precluded from asserting his inventions of a CPU; CMDC device e.g. smartphone; multi-sensor detection device e.g., smartwatch; and vehicle stall, stop, and slow-down system in this current case that were not adjudicated in the previous case.

Draper announced it has been awarded a \$26 million [] contract agreement by the U.S. Department of Defense (DOD) to further expand the capabilities of its unmanned autonomous systems (UAS) [drone] software to perform chemical, biological, radiological and nuclear (CBRN) reconnaissance missions in collaborative teams and in degraded operating environments. The Other Transaction Authority (OTA) agreement was awarded through the Joint Program Executive Office for Chemical, Biological, Radiological, and Nuclear Defense (JPEO-CBRND). Draper will advance its system under an effort at JPEO-CBRND called CSIRP, which stands for CBRN Sensor Integration on Robotic Platforms. Additional enhancements to the system will include advances in CBRN sensors. The autonomous software on the aerial unmanned platform [drone] will be designed to operate with [] user interface for the U.S. Army's Nuclear, Biological and Chemical Reconnaissance Vehicle (NBCRV) Stryker platform. Draper will integrate communications with the Tactical Assault Kit (TAK) platform, e.g., iTAK, ATAK, and WinTAK, enabling the unmanned systems to send images to a mobile device i.e., tablet, smartphone, etc. The UASs [drones] will use Draper's [] onboard sensors— including GPS, LiDAR, accelerometer, magnetometer and onboard cameras. Assisting in the development will be Draper's Human Systems and Mobile Applications Engineering cadre, a team that will help design and develop the mobile (tablet/ phone) interface to support collaborative teaming. <https://www.draper.com/media-center/newsreleases/detail/>

Golden is not precluded from asserting the new factual issues of his inventions in this current case.

In this previous case Phase I of the *Cell-All* initiative requires the sensor be inside the device. Rhevision's camera sensor.

Chemical Detection: The sensor **Rhevision** and UC San Diego responds to different chemicals by changing color; a single chip with many tiny pores, each respond to a different chemical; a standard cell-phone camera can detect them; the phone's camera watches the chip for color changes.

Rad Detection: Cell phones have cameras and camera sensors react to radioactivity. High energy particles strike a sensor array and register as small bright pinpoints or thin streaks of light. An app ... works well enough to alert users to dangerous levels of radiation.

Bio Detection: "In the diagnostic test, a patient sample is mixed with CRISPR Cas13 proteins (purple) and molecular probes (green) which fluoresce, or light up, when cut. Coronavirus RNA present, CRISPR proteins snip the molecular probes, whole sample to emit light. Fluorescence detected with a cell phone camera."

Apple iPhone 12: Dual - 12 MP (megapixel), OIS 12 MP The sensors contained in one array is determined by the *pixel* resolution phone camera. "*Tiny sensors tucked into cell phones could map airborne toxins in real time.*" Source: <https://www.understanding nano.com/cell-phone-sensors-toxins.html>

The CFC Judge never adjudicated Rhevision or its camera sensor. The Judge never adjudicated or issued a final judgement for the camera, on the merits. Therefore, the camera sensor cannot be identified as an issue precluded from the current case. (**Exhibit A: Qualcomm, not Apple**)

The DTRA ATAK software is built on the Google android open-source operating system. The following smartphones all have as standard the Android open-source operating system for which the DTRA ATAK software is built on.

- Google Pixel 5: Dual - 12.2 MP (megapixel), OIS 16 MP (megapixel)
- Samsung Galaxy S21: Triple - 12 MP (megapixel), OIS 64 MP (megapixel)
- LG V60 ThinQ 5G: Dual - 64 MP (megapixel), OIS 13 MP (megapixel)
- Qualcomm Smartphone for Snapdragon Insiders: Triple - 64 MP (megapixel) OIS; 8 MP, 12MP (megapixels)

Camera lens in cell phone with microfluidic lens functions as camera; uses microscope to focus on a chemical sensor. A megapixel camera captures the image from the array of nanopores uses fluid rather than bulky moving parts. The sensors contained in one array is determined by the *pixel* resolution phone camera. Megapixel resolution in cell phone cameras; probe a million different spots on the sensor simultaneously. *Tiny sensors tucked into cell phones could map airborne toxins in real time.* Source: [https:// www.understanding nano.com/cell-phone-sensors-toxins.html](https://www.understanding nano.com/cell-phone-sensors-toxins.html)

ATAK can connect to sensors on many platforms (e.g., smartwatches). The smartwatches of Google, Samsung, Qualcomm, & LG are equipped with Android OS

In the previous case, the Judge never adjudicated megapixel camera sensor of Apple as the CBR sensor located inside the Apple product; which means the camera sensor for CBR detection is not precluded in this current case

The DTRA ATAK software is built on the Google android open-source operating system. The following smartphones all have as standard the Android open-source operating system for which the DTRA ATAK software is built on.

- Google Pixel 5: Dual - 12.2 MP (megapixel), OIS 16 MP (megapixel)
- Samsung Galaxy S21: Triple - 12 MP (megapixel), OIS 64 MP (megapixel)
- LG V60 ThinQ 5G: Dual - 64 MP (megapixel), OIS 13 MP (megapixel)
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CONCLUSION

As the Supreme Court explained more than 50 years ago in *Lawlor v. National Screen Service Corp.*, 349 U.S. 322 (1955), res judicata does not bar a suit, even if it involves the same course of conduct as alleged earlier, so long as the suit alleges new facts or a worsening of the earlier conditions.

That is precisely the case here, with (1) expanded alleged infringement of at least three more of Golden's patented inventions; (2) expanded alleged infringement of at least three more of Golden's patents not asserted in the previous case. The new complaint raises alleged patent infringement against Golden's new patent claims that could not have been raised in the prior litigation; and (3) at least nine judges have determined, since the ruling of the first case *Golden v. US* no. 13-307C, that infringement occurs when Golden's patented inventions of a new, improved upon cell phone; a central processing unit (CPU); and, a multi-sensor detection device of chemical, biological, radiological, nuclear, or explosives sensors, are combined.

Golden has also alleged in this current case, infringement of Golden's patented stall, stop, or vehicle system for unmanned aerial vehicles (UAVs) or drones. The new complaint raises alleged patent infringement against Golden's patented stall, stop, or vehicle system for unmanned aerial vehicles (UAVs) or drones that could not have been raised in the prior litigation.

In *Lawlor v. National Screen Service Corp.*, 349 U.S. 322 (1955), the Supreme Court unanimously reversed the application of res judicata where the lower [appellate] court applied the same reasoning as the district court applied here. There, the plaintiffs brought an antitrust suit that was ultimately dismissed with prejudice. *Id.* at 324.

Seven years later, the plaintiffs brought a second antitrust suit against many of the same defendants, alleging the same course of wrongful conduct, which had worsened in the interim. *Id.* at 328. The lower courts applied res judicata to bar the second suit. *Id.*

The Supreme Court reversed, explaining that even though "both suits involved essentially the same course of wrongful conduct," res judicata did not apply. *Id.* at 327 (internal quotation marks omitted). The Court noted that "such a course of conduct—for example, an abatable nuisance—may frequently give rise to more than a single cause of action." *Id.* at 327–28.

The Court held that claims in the second suit based on events that had not yet occurred at the time of the first suit were not barred: "While the [earlier] judgment precludes recovery on

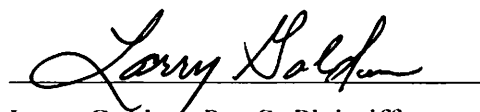
claims arising prior to its entry, it cannot be given the effect of extinguishing claims which did not even then exist and which could not possibly have been sued upon in the previous case.” *Id.*

The Court further held that the plaintiffs’ claims in the second suit survived res judicata to the extent that those claims alleged worsening of the earlier wrongful conduct: “In the interim, moreover, there was a substantial change in the scope of the defendants’ alleged monopoly ... with the result that the defendants’ control over the market . . . had increased to nearly 100%.” *Id.* (emphasis added). “Under these circumstances,” the Supreme Court explained, “whether the defendants’ conduct be regarded as a series of individual torts or as one continuing tort, the [earlier] judgment does not constitute a bar to the instant suit.” *Id.*

Lawlor retains its vitality to this day. *See, e.g., Darney v. Dragon Prods. Co., LLC*, 592 F. Supp. 2d 180 (D. Me. 2009) (applying *Lawlor* to deny application of res judicata where second complaint included new factual allegations, even though there was “facial similarity” with the first complaint). *See Quality Ready Mix, Inc. v. Mamone*, 520 N.E.2d 193, 197 (1988) (for res judicata to apply, the prior proceeding “must involve the same issues”).

The Government’s Motion for Summary Affirmance is *frivolous* to say the least, and in this current case the Government’s unsubstantiated theories of *Res Judicata* and *Kessler* asserted here, proves the Government only purpose for filing the motion is to sway the Court. The Government’s motion should be stricken. [FRCP Rule 12(f)]

Sincerely,

A handwritten signature in cursive script, reading "Larry Golden", is written over a horizontal line.

Larry Golden, *Pro Se* Plaintiff

740 Woodruff Rd., #1102

Greenville, SC 29607

(H) 8642885605

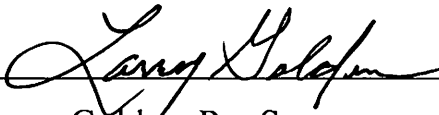
(M) 8649927104

Email: atpg-tech@charter.net

CERTIFICATE OF SERVICE

The undersigned hereby certifies that on this 24th day of September, 2024, a true and correct copy of the foregoing “Plaintiff-Appellant’s Reply in Support of Plaintiff-Appellant’s Cross-Motion to Strike [12] Defendant-Appellee’s Motion for Summary Affirmance” [9], was served upon the following Defendant by priority “express” mail:

Grant D. Johnson
Trial Attorney
Commercial Litigation Branch
Civil Division
Department of Justice
Washington, DC 20530
Grant.D.Johnson@usdoj.gov
(202) 305-2513



Larry Golden, Pro Se

740 Woodruff Rd., #1102
Greenville, South Carolina 29607
atpg-tech@charter.net
864-288-5605

Exhibit A

QUALCOMM®

DHS asked, “what if...”

...we wanted to provide high impact ubiquitous technology for CBRNE sensing?

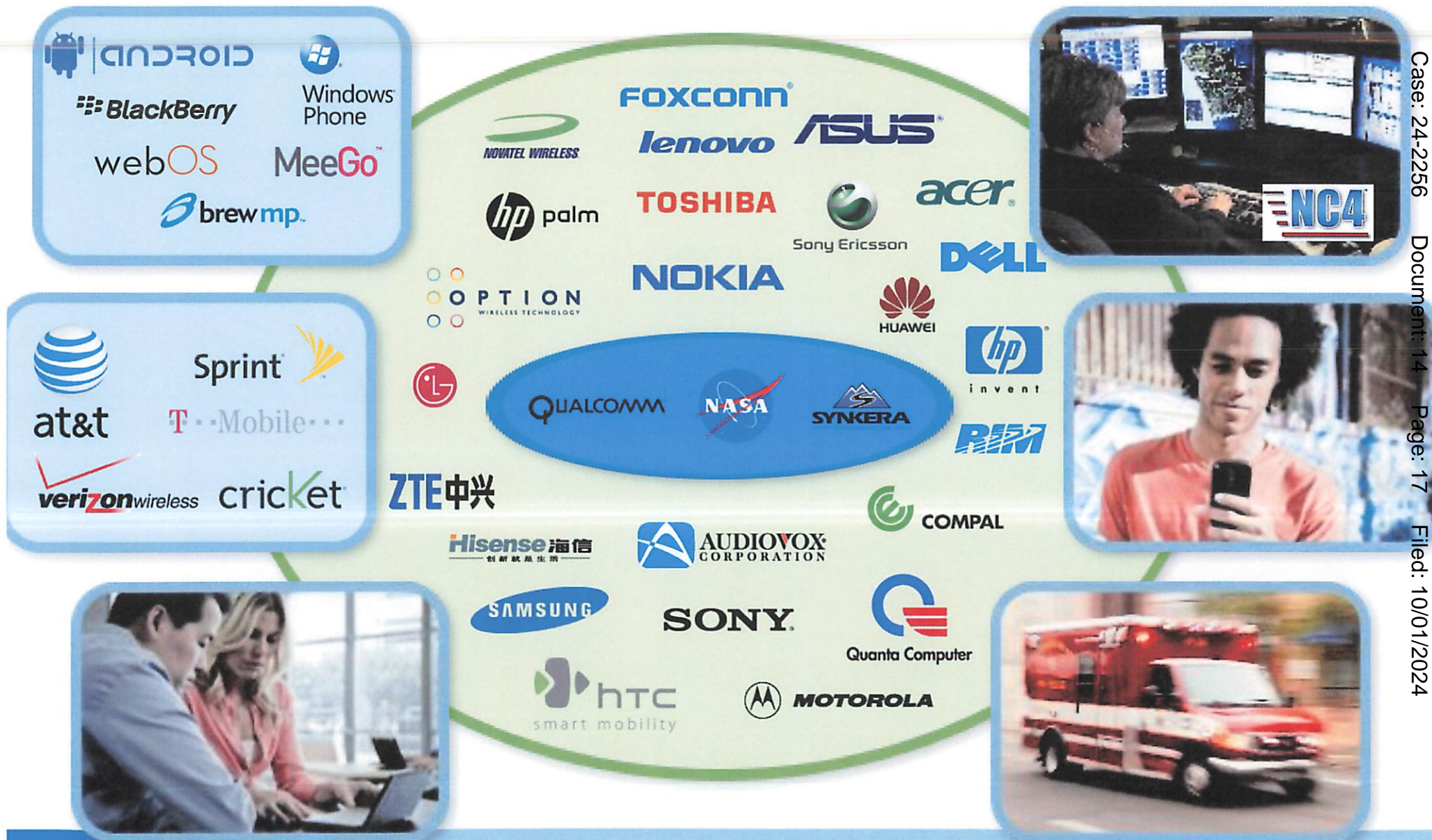


DHS asked, “what if...”

Answer: Use commercial cellular phone ecosystem and commercial networks



Who are the necessary stakeholders?



How does it work?



What's left to do?



FIRST RESPONSE COMMUNITY

- Seamless integration to their workflow
- Training in the use of Cell-All

BUSINESS

- How to make it attractive for all stakeholders

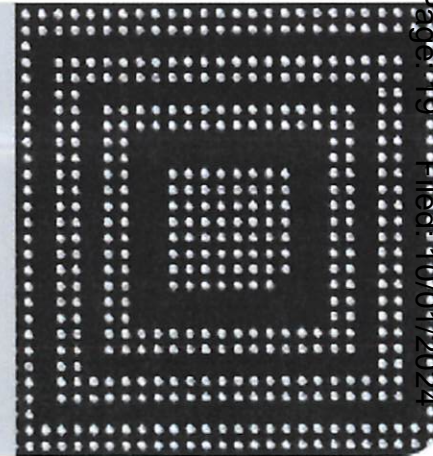


SYSTEM

- First responder and user trials
- Performance and scalability
- Enhance security for commercial use
- Refine algorithm

SENSORS

- Manufacturing Volumes
- Reproducibility
- Power
- Integration



Cell-All Ubiquitous Biological and Chemical Sensing

Ed Charbonneau
Vice President, Strategic Development
Qualcomm Government Technologies
September 24, 2012



QUALCOMM

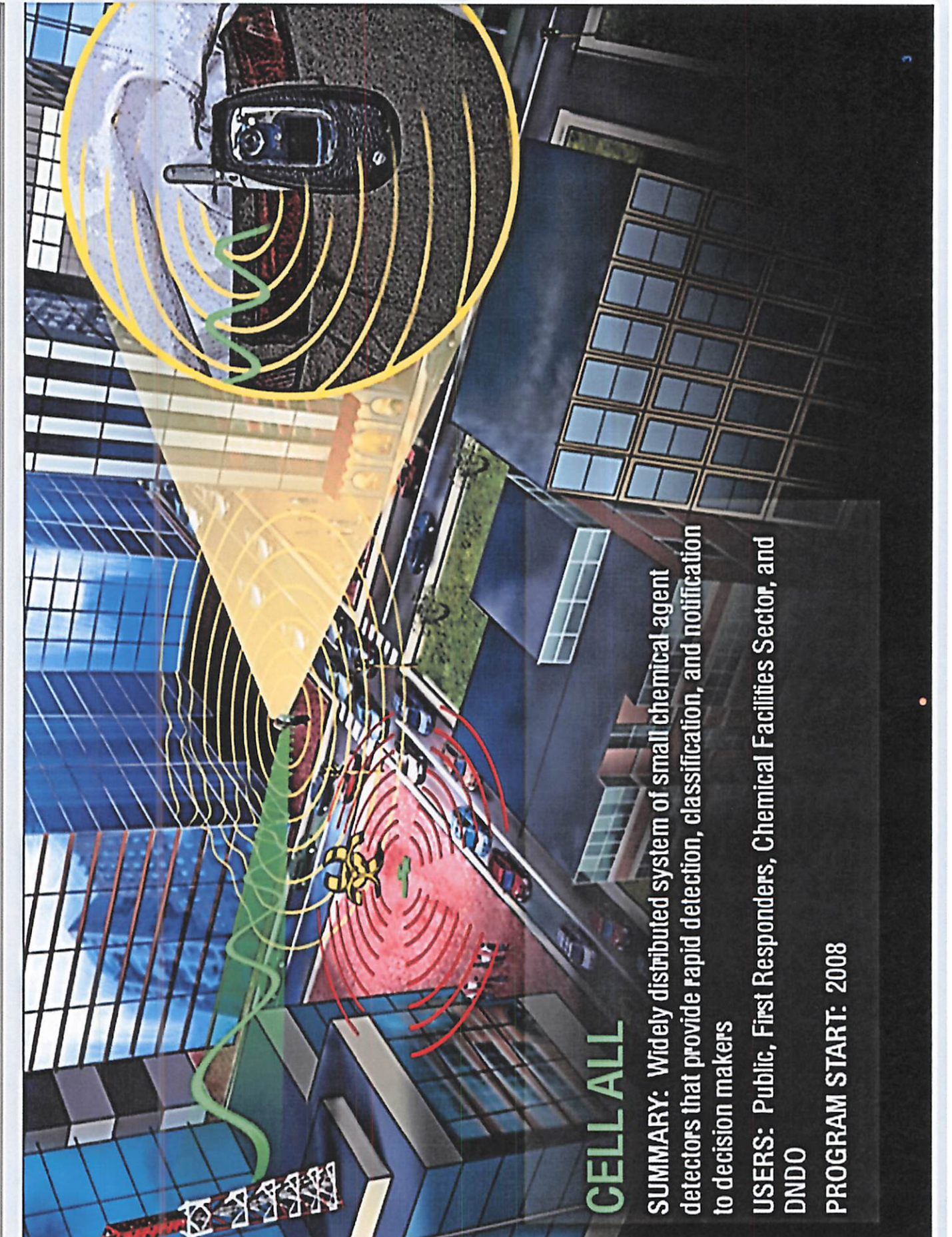
Fortune 500 Company

25+ years of driving the evolution of wireless technologies

Making wireless more personal, affordable and accessible to people everywhere

World's largest fabless semiconductor company,
#1 in wireless





CELLALL

SUMMARY: Widely distributed system of small chemical agent detectors that provide rapid detection, classification, and notification to decision makers

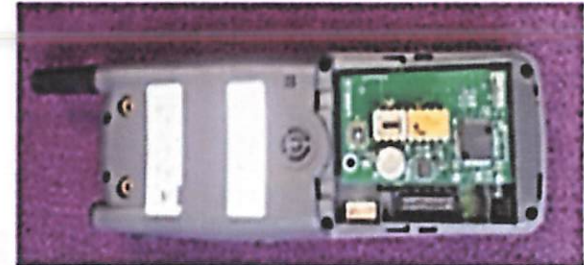
USERS: Public, First Responders, Chemical Facilities Sector, and DND

PROGRAM START: 2008

Qualcomm's Cell-All Concept

- Phase I

- Establish miniature sensor efficacy
- Discover limitations for cell phone integration
- Develop first generation prototypes
- Proof of concept: Use a development platform to integrate an existing sensor to demonstrate the ability to sense a defined set of agents



- Phase II

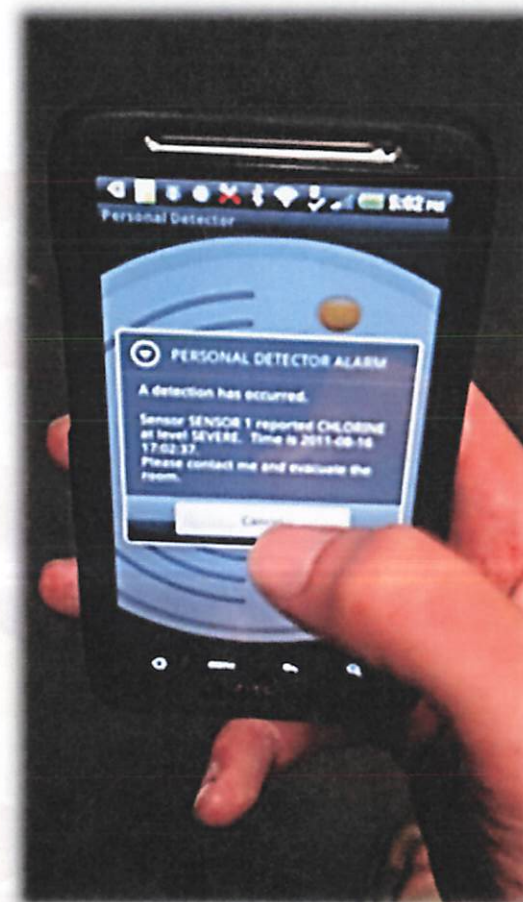
- Transmit sensor data via 3G and/or Wi-Fi
- Design a multiple sensors network for chemical profiling
- Determine whether the viability of multiple sensor units per phone are possible
- Explore the use of Bluetooth and other external interfaces
- Standardize the sensor platform (internal and external interfaces, software architecture)

- Phase III

- Provide a plan for achieving widespread acceptance by Cell-All services by subscribers, cell phone OEMs, wireless carriers, and government agencies

Cell-All Demonstrations in September 2011

- LAFD, Frank Hotchkins Memorial Training Center
 - Carbon Monoxide
 - Personal Protection Scenario
 - Audio Alarm
 - In Case of Emergency (ICE) Alerts
- FEMA, Center for Domestic Preparedness
 - Toxic Chemical Agents
 - Hazardous Materials Response Team Scenario
 - Network response
 - Geographic-based visualization



Ideas for Industry and Labs

- Integrating sensors into cell phones must take into consideration the cell phone environment
 - Handsets are price sensitive → component cost of sensor must be <\$1.00
 - Size → 3-15 sensors on a <6x6x2mm optimally 2x2x1mm, including components necessary for support (e.g., fans, vents, filters, dwell, etc.)
 - Power consumption → sensor must not significantly affect the phone's battery life
 - Processor → leverage the phone's processor instead of adding a processor to a sensor
 - Manufacturing → sensor must tolerate manufacturing temperatures as high as 260°C
 - Packaging → sensors must withstand vibration, drops, and abuse of a typical handset
 - Software → must be release controlled and compatible with the OS
 - Sensor placement → does not have to be on the inside of a cell phone (e.g., Sharp's Pantone smartphone with radiation sensor)
- Learn from the evolution of other sensors in the cell phone (e.g., accelerometer, gyroscope, compass, camera, etc.)

The Sharp Pantone 5 107SH, a smartphone with built in radiation detector



Photographs courtesy of "The Verge"

Cell-All Team

Sensor Development and Systems Integration
 NASA Ames Research Center
 Jing Li: 650-604-4352



Sensor and Sensing Module Development
 Synkera Technologies, Inc.
 Debra J. Deininger, 720-494-8401, ddeininger@synkera.com



Sensor Development
 Seacoast Science, Inc.
 Louis Haerle, 760-268-0083, louis@seacoastscience.com



Data Consolidation and Visualization
 NC4
 Chris Needs, 310-606-4402, chris.needs@nc4.us



Systems Design and Integration
 Qualcomm Incorporated
 Kathy de Paolo, 858-658-2988, kdepaulo@qualcomm.com



Thank you for attending

September 24, 2012

9



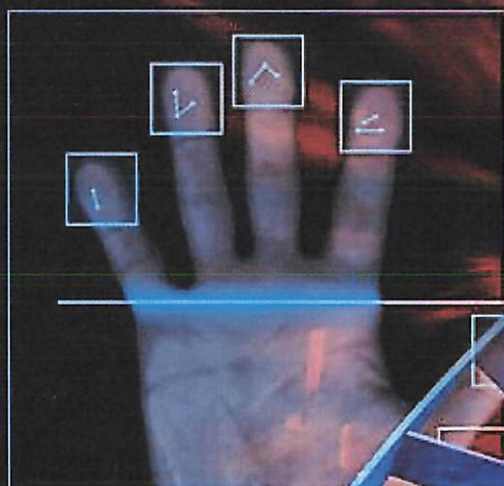
HSARPA

Homeland Security Advanced Research Projects Agency



Homeland
Security

Science and Technology



#10019123-0

CELL-ALL
Ubiquitous Chemical Sensing

Case: 24-2256

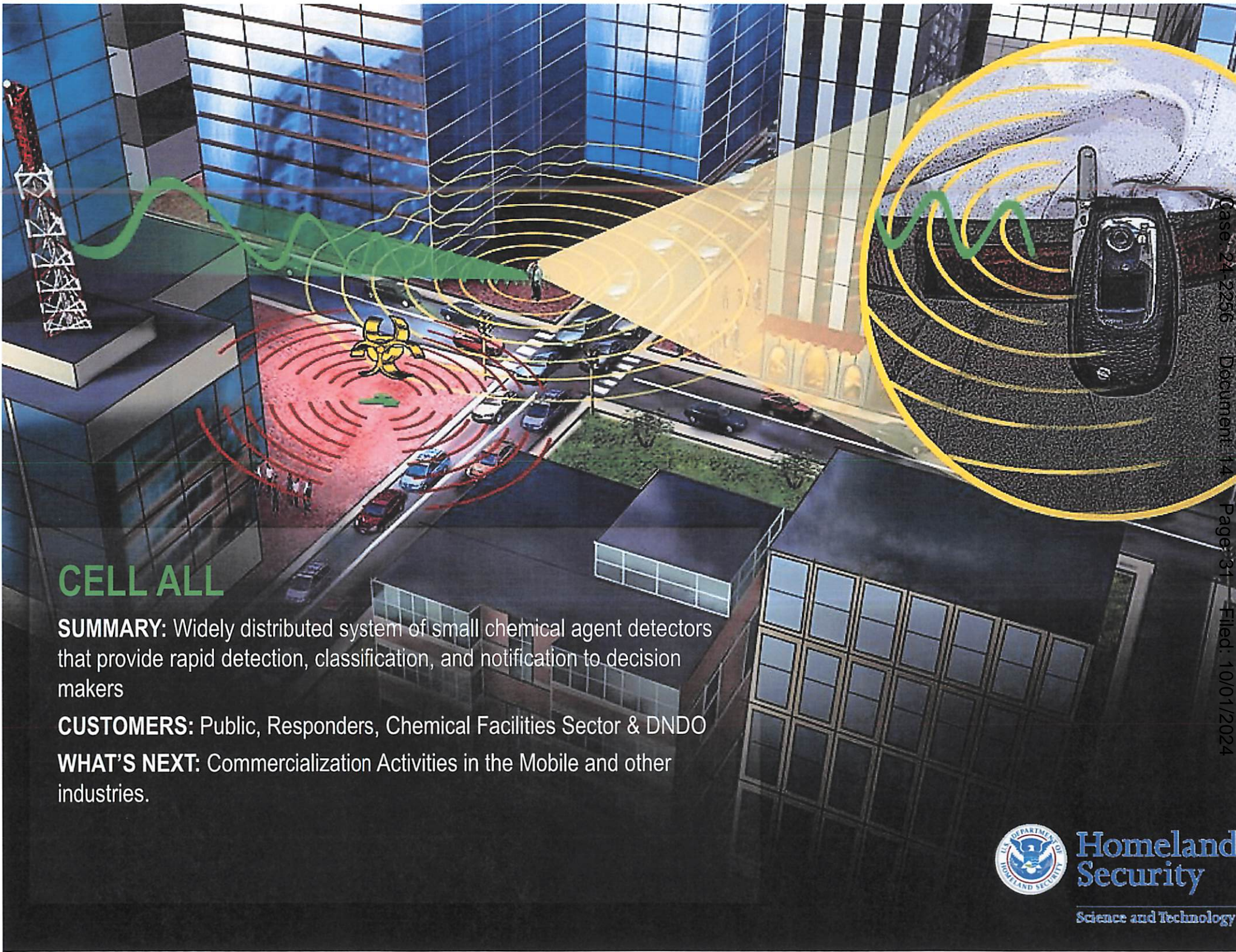
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Filed: 10/01/2024

HOMELAND SECURITY ADVANCED RESEARCH PROJECTS AGENCY

- Promote revolutionary changes in technology
- Accelerate technology prototyping
- Advance the development, testing, and evaluation
- Deployment of critical home security technologies



CELL ALL

SUMMARY: Widely distributed system of small chemical agent detectors that provide rapid detection, classification, and notification to decision makers

CUSTOMERS: Public, Responders, Chemical Facilities Sector & DNDO

WHAT'S NEXT: Commercialization Activities in the Mobile and other industries.



**Homeland
Security**

Science and Technology

Motivations to Improve Detection

- Large, expensive, stationary systems represent state of the art chemical agent detection
- Variety of less-expensive handheld systems available as separate systems for mobile response
- Geographic coverage of these systems limited to specific areas of deployment
- Sampling may not reflect actual environment where people are actually located



**Homeland
Security**

Science and Technology

Opportunity for Innovation

Large, dynamic sensing system

- Miniaturized, effective sensor capability
- Integrate new low-cost sensing into common devices
 - Move sensing applications to the edge
- Harvest benefits of network effects and crowd sourcing
- Opt-In for monitored systems for Privacy Protection
- Integrate with 300+ million cell phones now used in U.S.
- Leverage billions of dollars spent each year in sensor, carrier network and cell phone development
 - Wireless Industry, Industrial Sensing, Defense Investments

Result: Early indications and warning for hazardous chemical events



**Homeland
Security**

Science and Technology

Technical Approach

Revolutionary Technology & Accelerated Prototyping Embeddable Miniature Sensors

- Sample collection
- Reusable devices with lifetimes of at least 18 months
- Functional sensor sensitivity & selectivity in the environment
- Prototype concepts for integrated sensing Devices
- Methods and concepts for disseminating of sensor information

Accelerated Prototyping & Advance Development, Test and Evaluation Sensing Network to Significantly Expand Coverage

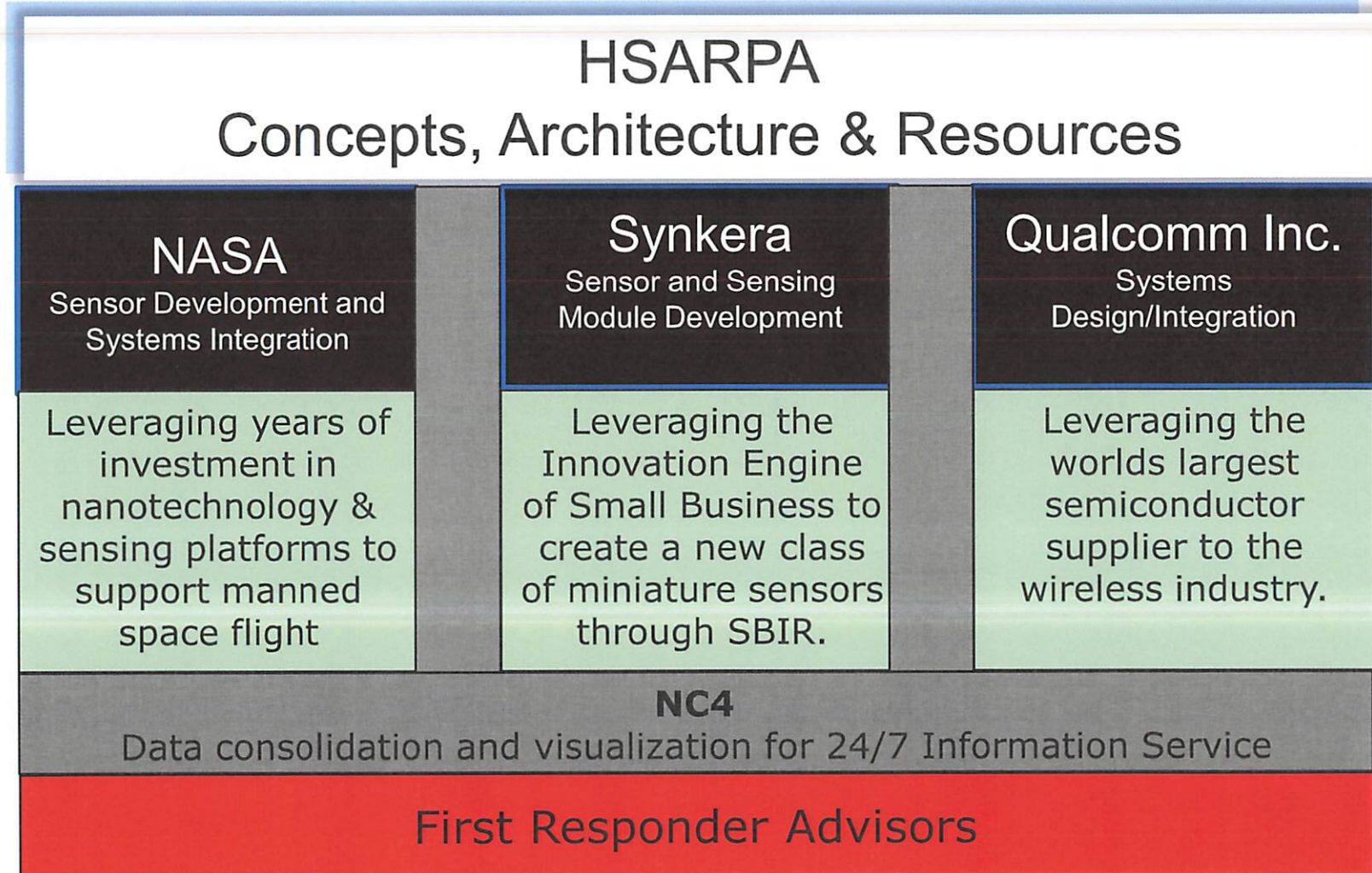
- Investigate Sensor Performance in a Larger Scale Networks
- Operational Evaluation for Responder Environments
- Concepts of Operation for Ubiquitous Sensing



**Homeland
Security**

Science and Technology

CellAll Team



**Homeland
Security**

Science and Technology

Revolutionary Technology & Advanced Prototyping

- Established miniature sensor efficacy
- Discovered parameters for cell phone integration
- Developed first generation prototypes
- Proof of concept demonstrations
 - NASA – Leveraging nanosensor work for space missions to further miniaturizing space-qualified integrated sensing system for detection of chemical agents using smartphones.
 - Synkera – Leveraging SBIR funded development of miniature sensors.
 - Qualcomm – Using existing hardware platform to integrate existing sensor & demonstrate ability to sense chemical agents

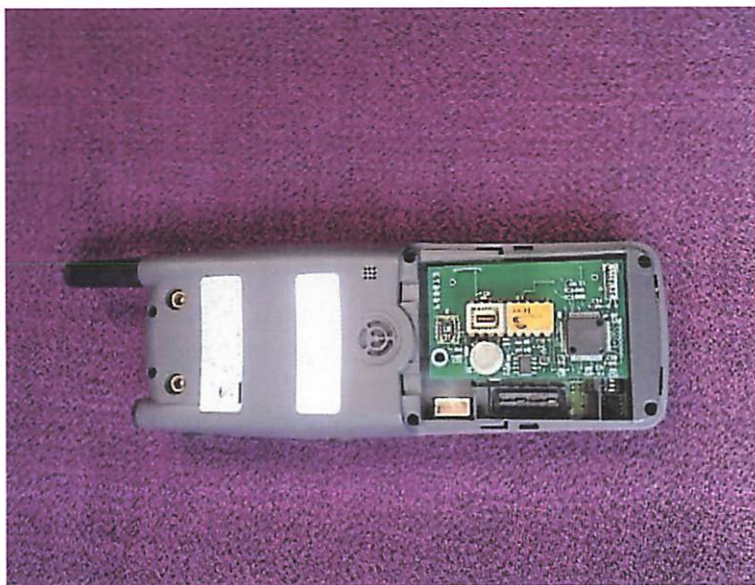


**Homeland
Security**

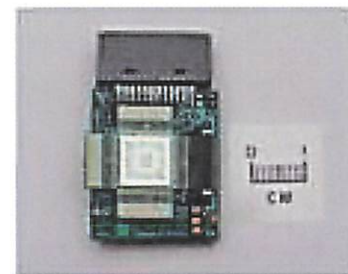
Science and Technology

Phase I Prototypes

Qualcomm FFA



NASA ARC nanosensor module for iPhone integration



iPhone Specifications



**Homeland
Security**

Science and Technology

Phase II Prototype Goals

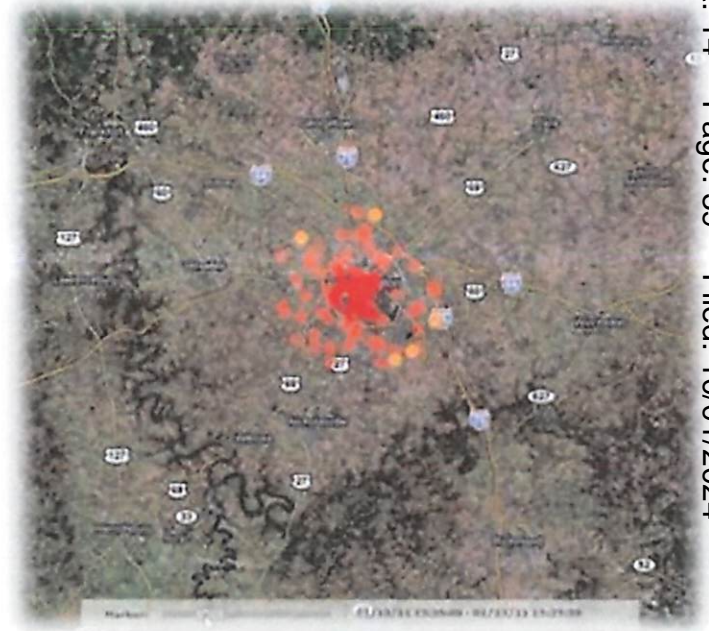
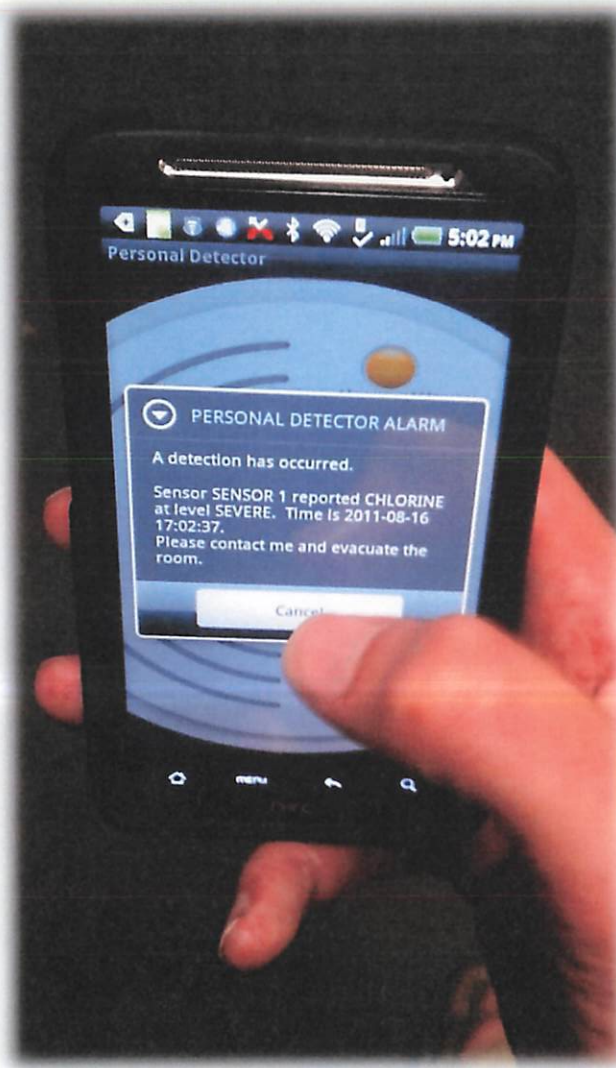
- Achieve greater number of total prototype devices at reasonable unit cost
- Sensor data transmission via 3g and/or Wi-Fi
- Multiple sensors network for chemical profiling
- Decouple chemical sensor from phone.
- Multiple sensor units per phone are possible
- Bluetooth/Proprietary Interfaces
- Standardize sensor platforms
- Increase opportunities for participation



**Homeland
Security**

Science and Technology

Phase II Prototypes



**Homeland
Security**

Science and Technology

Commercial Opportunities

- Focus Group Analysis for Cell Phone Based Sensing
 - Personal Protection Applications Sell
 - Privacy is Important
 - Reliance on Local Officials
- Multiple Market Business Models
- Spin-off Sensor Applications
 - Medical Diagnostics
 - Multi-gas Detectors for Firefighter Applications



**Homeland
Security**

Science and Technology

Demonstrations

- Domestic Preparedness Application
 - Toxic Chemical Agents (Public & Industrial Safety)
 - Hazardous Materials Response Team Scenario
 - Network response
 - Geographic-based visualization
- LAFD, Frank Hotchkins Memorial Training Center
 - Carbon Monoxide (Personal Safety)
 - Personal Protection Scenario - Audio Alarm
 - In Case of Emergency (ICE) Alerts
 - Network Command/Control



**Homeland
Security**

Science and Technology

Enabling a Spectrum of Applications

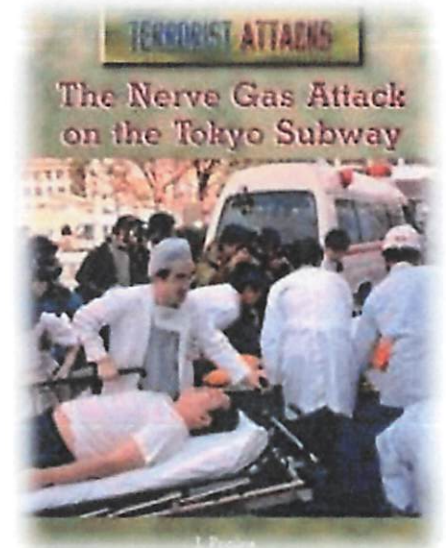
Personal Safety



Industrial Safety (Critical Infrastructure)



Public Safety



**Homeland
Security**

Science and Technology

Status

Government Funding has Ended

Cost Shared Commercial Funding Continues

Venture Capital Active

Niche Products Available Now

First Large Scale Commercial Product Launch within 1 Year



**Homeland
Security**

Science and Technology

Exhibit B

JSTO in the News

DTRA.mil

February 2020 | Vol. 10 No. 2



Failure is an option:
DTRA's CBOA event is a
vital step of the
acquisition process

ATAK in the field



Lead DoD science and technology to anticipate, defend, and safeguard against chemical and biological threats for the warfighter and the nation.



DEFENSE THREAT REDUCTION AGENCY

8725 John J Kingman Road, Stop 6201, Fort Belvoir, VA 22060

www.dtra.mil

Find us on social media: @doddtra



Download our eBook—keyword: DTRA



Front cover: A simulated crime scene during a training exercise at Joint Base McGuire-Dix-Lakehurst, N.J., on October 23, 2019. New Jersey National Guard photo by Mark C. Olsen.

Inside cover: Photo by KJH Studios (www.kristijanhoover.com).

Back cover: An activity at the Urban Advanced Technologies Exercise 2018, which took place on March 22, 2018. U.S. Marine Corps photo by Lance Cpl. Robert Alejandre.

FAILURE FAILURE IS AN OPTION. OPTION.

**DTRA's CBOA event
is a vital step of the
acquisition process.**

The Defense Threat Reduction Agency (DTRA) values and encourages evaluation of technology prototypes by warfighters and other end users while the prototypes are still in development. DTRA's approach in evaluating prototypes is best exemplified through its annual Chemical and Biological Operational Analysis (CBOA) event, which provides a realistic venue for technology developers to observe how their prototypes function in an operationally relevant environment. CBOA supports the construct of modernizing key capabilities, which is part of DoD's "Build a More Lethal Force" line of effort. **After a technology prototype is assessed, the DoD may consider acquiring the prototype or recommend utility-related design improvements to the developer.** Sometimes, the prototype may not have utility for the military — and this "failure" in utility is acceptable because the end user's assessment informs

Figure 1. Members of the U.S. Army's 101st Airborne Division secure a mock laboratory and survey their next target. Photo courtesy of DTRA.

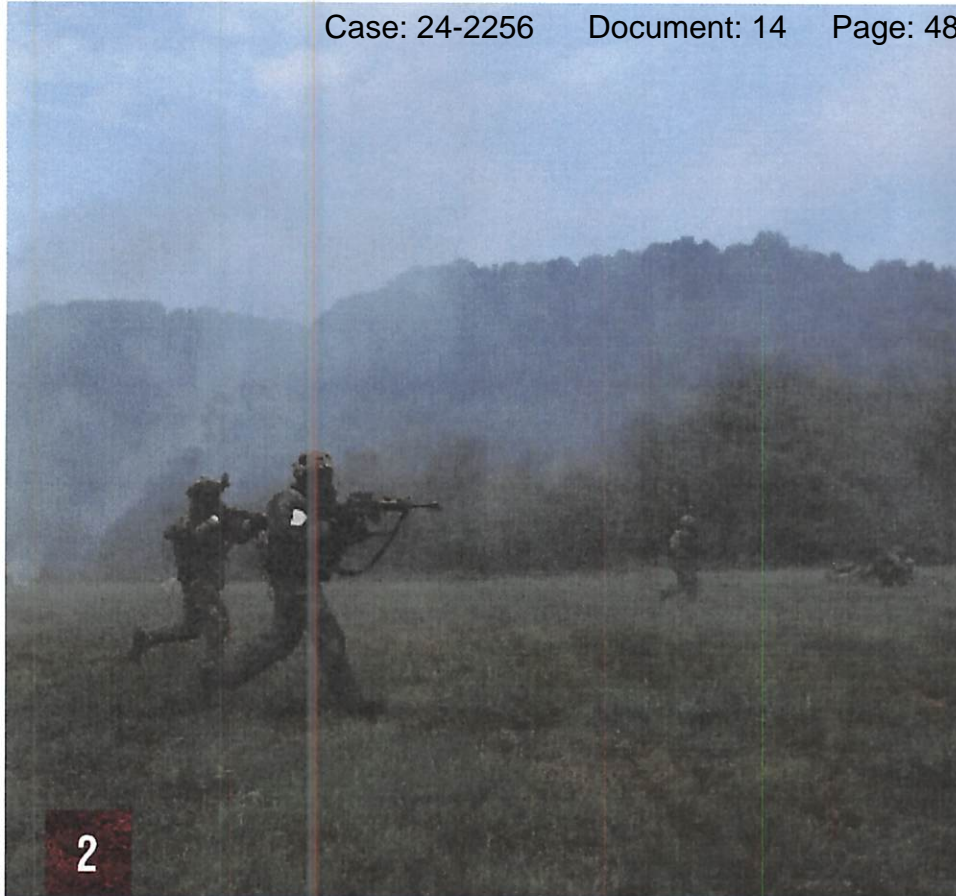
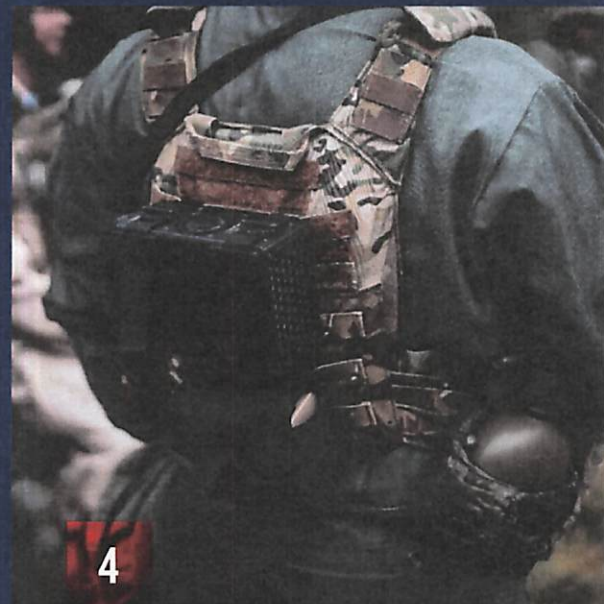


Figure 2. Service members from the U.S. Army's 101st Airborne Division perform a maneuver operation in full Mission Oriented Protective Posture towards their next target at the Volkstone site at Camp Dawson, W.Va.; Figure 3. Paper On Demand placed on the shoulder to warn of a hazard; Figure 4. RINI Chemical Suit Cooling System. Photos courtesy of DTRA.



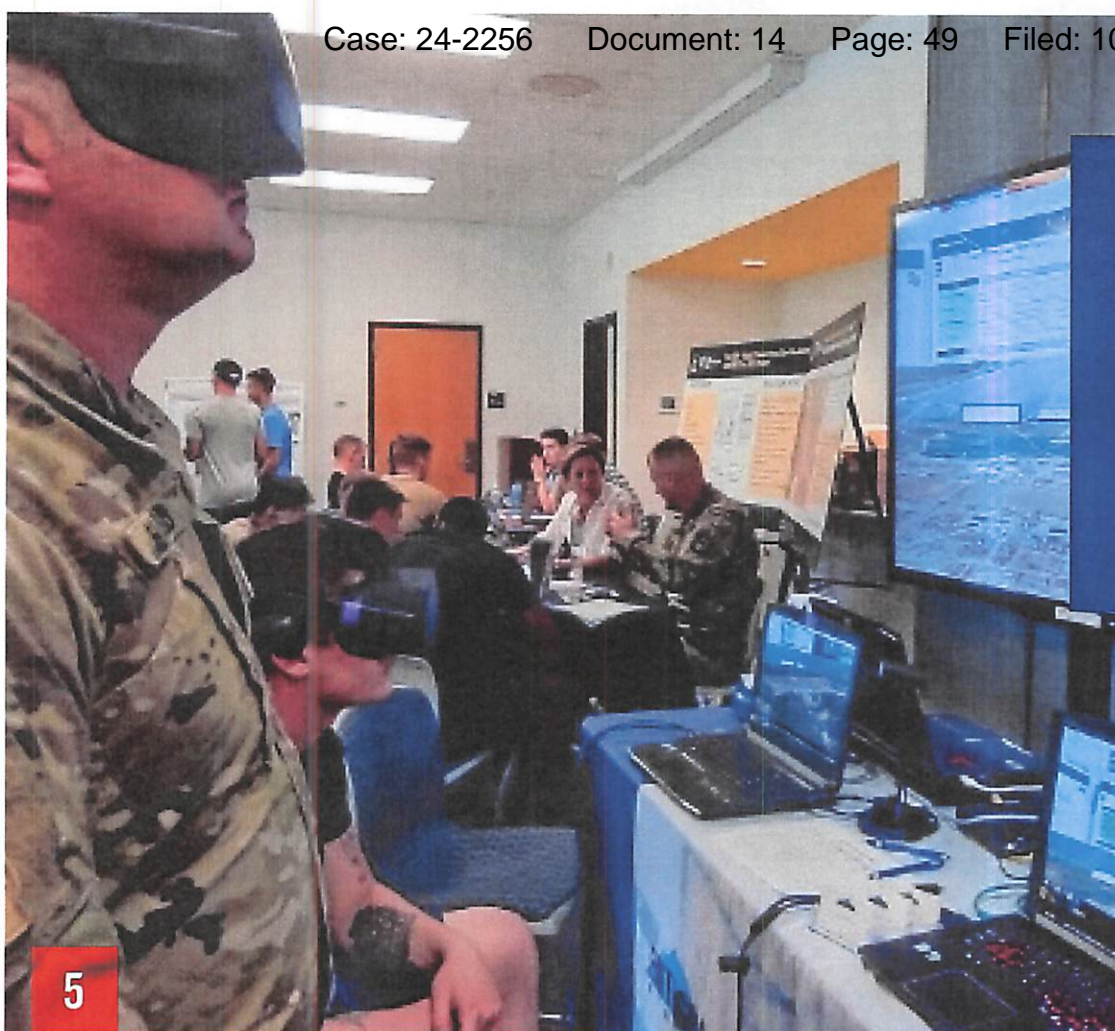
the developer of functional changes needed when it is less expensive to make them. Technology assessments at CBOA do not carry repercussions toward future acquisition decisions. Feedback from participants inform current and future capability documents that drive design decisions, expedite the acquisition process, and increase the likelihood of success across these domains: doctrine, organization, training, material, leader development, personnel, and facilities.

In August 2019, seventy-nine warfighters participated in a hands-on field experiment to evaluate prototypes in chemical and biological defense (see Figures 1–11). The six-day experience took place at Camp Dawson, West Virginia, and was the second annual CBOA event hosted by DTRA. CBOA employed scenario-based, live field experiments to view each new technology prototype from both the warfighter and adversary perspectives to identify improvements and weaknesses in the prototypes. The 2019 CBOA also included a User Feedback Tent for Technology Concepts.

Warfighters who participated represented several military services: U.S. Army's 101st Airborne Division; U.S. Army's 20th Chemical, Biological, Radiological, Nuclear, and Explosives Division; U.S. Marine Corps' 14th Marine Air Group; 35th Civil Support Team West Virginia Army National Guard; U.S. Navy's Explosive Ordnance Disposal; and U.S. Air Force's Research Laboratory.

Technology developers who participated represented industry, academia, and government laboratories and attended for many reasons: to reengage users in assessing prototypes refined based on feedback gathered at the 2018 CBOA event; to engage users to assess new prototypes; to explore the applicability of a new concept in chemical and biological defense; or to network and explore collaborations with other developers and DTRA.

CBOA brought together not only warfighters and technology developers but also other organizations. To aid with live scenarios, DTRA collaborated with the



"This week is the first time in my life I have been cold inside a chem suit...There is no way I am giving this back!**"**

— WARFIGHTER PARTICIPANTS ON THE RINI CHEMICAL SUIT COOLING SYSTEM

Figure 5. Geospacial collaborative environment – User Feedback Concept Tent; Figure 6. Pocket detection pouch – User Feedback Concept Tent. Photos courtesy of DTRA.



5

6

5



"We successfully trained a medic, and he was able to train one of the Marines in the field to operate and run our mock test on the Omni System. This helped to validate [that] our mobile application user interface design is simplistic and user friendly. **We learned an extreme amount from the operators during our end user debrief.** We were able to make changes each night and see those changes help the operators the next day."

— REPRESENTATIVE FROM
GENEXPERT OMNI

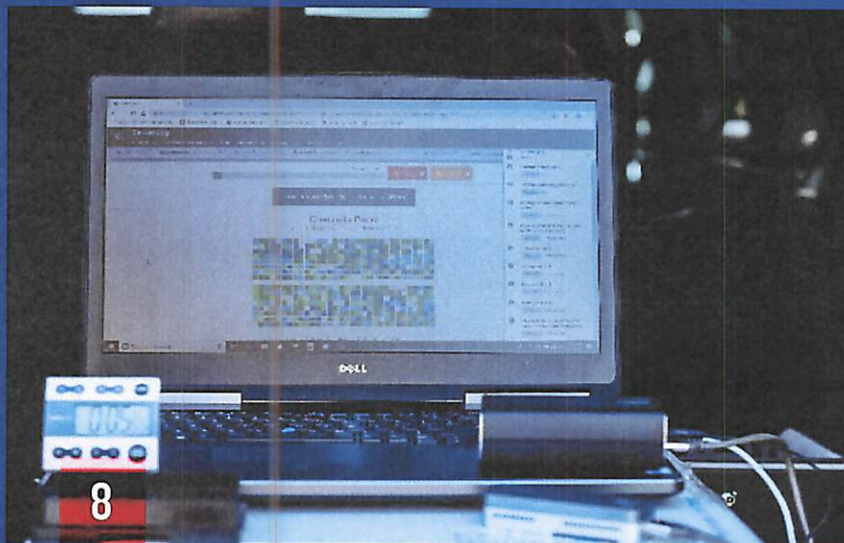


Figure 7. GeneXpert Omni in use; Figure 8. Field Forward Sequencing System results; Figure 9. Waterless decontamination; Figure 10. The same Integrated Sensor Architecture (ISA) traffic (sensor status and hazards) on the Air Force, Marines, and Army common operating pictures (COPs) at the same time transiting from a simulated unclassified side, through the guard, to a simulated classified side command and control systems. Chemical, biological, radiological, and nuclear ISA sensor status was also pushed and rendered on a Multifunctional Kit. The yellow outline is the integrated-early-warning ISA hazard message rendered on all high-side COPs. All photos courtesy of DTRA.

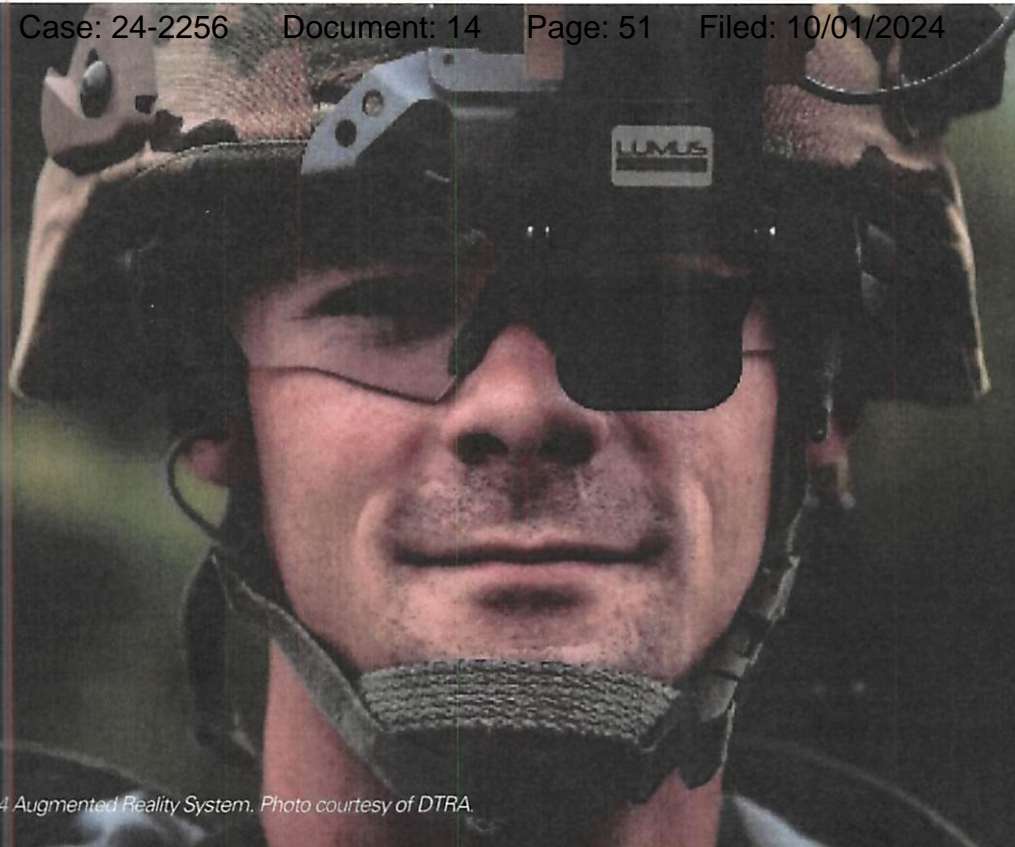


Figure 11. ARC 4 Augmented Reality System. Photo courtesy of DTRA.

Night Vision Electronic Sensors Directorate's Quick Response Branch and Unique Mission Cell, which is part of the U.S. Army's Combat Capabilities Development Command's (CCDC) Command, Control, Computers, Communications, Cyber, Intelligence, Surveillance, and Reconnaissance Center. Experts from CCDC's Chemical Biological Center provided the simulants that triggered all detection devices. The Joint Vulnerability Assessment Branch evaluated technology prototypes for vulnerabilities in computer network security and radio frequency. The U.S. Military Academy's Warfighter Technology Tradespace Methodology assessed each prototype's capabilities, logistics, usability, and training aspects.

Data collected during live scenarios included a prototype's performance, such as its ability to interact with other equipment, adaptability to chemical and

biological defense, training requirements, and ease of use. Developers also learned about their prototypes' security vulnerabilities from an adversarial perspective. At the User Feedback Tent for Technology Concepts, developers received guidance on the utility or applicability of their emerging technology or idea in the chemical and biological environment.

Warfighters and technology developers reported that the collaborative experience was valuable, informative, exciting, and insightful. The 2020 CBOA will take place at Fort Carson, Colorado, from 27 to 31 July. DTRA will again bring together scientists, warfighters, and technology developers to evaluate new and emerging technologies for utility and applicability in chemical and biological defense. ●



Review the 2020 CBOA Request for Information on beta.sam.gov (search using the key word CBOA). Watch highlights from the last CBOA event by visiting <https://vimeo.com/363621979/9e4637e7e6>.



ATAK

IN THE FIELD

CBRN INTEGRATION EQUIPS WARFIGHTERS
WITH ADVANCED SITUATIONAL AWARENESS

FORGING A TACTICAL EDGE



Through collaboration and innovation, the Defense Threat Reduction Agency has integrated its powerful, hazard-awareness-and-response tools into the Android Tactical Assault Kit (or the Android Team Awareness Kit, ATAK). ATAK is a digital application available to warfighters throughout the DoD. Built on the Android operating system, ATAK offers warfighters geospatial mapping for situational awareness during combat — on an end-user device such as a smartphone or a tablet. U.S. forces use ATAK to self-identify their locations, and their enemy's location, to visually communicate their movements to friendly forces in the area. The software has successfully aided in search-and-rescue and natural-disaster responses, such as coordinating the relief efforts following Hurricane Florence. Warfighters can now use ATAK to guide themselves to safety when confronted with a release of chemical and biological agents and radiological and nuclear threats (CBRN).

Figure 1. DTRA's CBRN plug-ins provide increased situational awareness, understanding, and decision-making abilities to ATAK users. Photos courtesy of DTRA.

Warfighters rely on digital maps and other data to guide their mission. However, a mission requires additional data when warfighters are confronted with a release of CBRN. Warfighters need to know the weather conditions in real time (e.g., wind speed and direction, stability, precipitation) to understand the potential for agent dispersal and spread. They also need to know the type of agent released, monitor their personal vitals to assess their exposure to the agent, and find a route to safety. DTRA has digital tools to help warfighters defend against CBRN, but they were often housed as stand-alone applications and not embedded in platforms regularly employed by warfighters outside of the CBRN community.

ATAK can connect to sensors on many platforms (e.g., satellites, drones, smartwatches) and has many plug-ins that warfighters can download to customize their operating environment, depending on their role or mission. ATAK's software architecture allows plug-ins to share information with other plug-ins or applications on the end-user's device. With DTRA's contribution, ATAK now includes these three CBRN plug-ins (see Figures 1–5): 1) CBRN Effects, 2) CBRN, and 3) Filter Times.



Figure 2. Warfighter gaining situational awareness through the use of ATAK plug-ins developed by DTRA. Photo courtesy of DTRA.

“WITH DTRA’S CONTRIBUTION, ATAK NOW INCLUDES THESE THREE CBRN PLUG-INS: CBRN EFFECTS, CBRN, AND FILTER TIMES.”

The first plug-in, CBRN Effects, adds two capabilities to ATAK: real-time hazard prediction and vehicle navigation for CBRN events. The plug-in optimizes DTRA's Hazard Prediction and Assessment Capability to run on an end-user device in disconnected (without an internet connection) environments. When the plug-in is connected to the internet, it incorporates DTRA's Meteorological Data Server to provide warfighters with real-time weather — from domestic to global, depending on the mission — to characterize the dispersal and spread of chemical and biological warfare agents following a release. The CBRN Effects plug-in also makes use of an existing ATAK plug-in, the Vehicle Navigation System (VNS). With VNS, the CBRN Effects plug-in offers warfighters a complex routing tool that accounts for contamination and exposure, in addition to travel time, and advises the warfighter on the optimal paths to take for safety.

To add the second plug-in, CBRN, DTRA collaborated with the U.S. Army Combat Capabilities Development Command Chemical Biological Center (CCDC CBC) to implement the U.S. Army's Integrated Sensor Architecture (ISA) into ATAK. U.S. Army's ISA is used across the DoD, so DTRA and CCDC CBC built upon ISA to include sensors to capture CBRN events. ISA seamlessly integrates different sensor technologies to give warfighters the data they seek. For example, ATAK provides a single interface for viewing and controlling different CBRN-sensing technologies, whether that is a wearable smartwatch that measures a warfighter's vitals (e.g., heart rate) or a device mounted on a drone to detect chemical warfare agents.

The third plug-in, Filter Times, addresses what warfighters have long asked for: real-time guidance on how long they should wear masks and assume a mission-oriented protective posture after a CBRN release. ATAK offers this guidance through the Filter Times plug-in, which instructs the warfighter when to stay near the ground, when to seek immediate help, and when to avoid contamination.

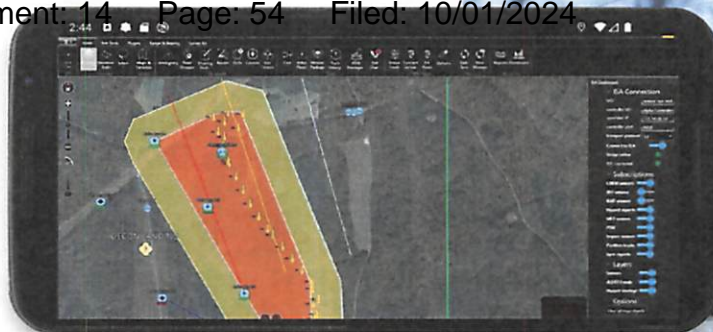


Figure 3. Through ISA, ATAK provides a single interface for viewing, subscribing to and requesting control of different CBRN sensor technologies. Photo courtesy of DTRA.

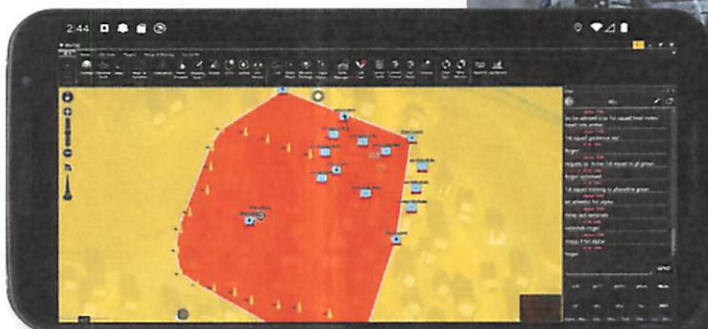


Figure 4. ATAK enables users to visualize the output of the CBRN Effects plug-in, which characterizes the dispersal and spread of chemical and biological warfare agents, superimposed on the dynamic locations of CBRN assets. Photo courtesy of DTRA.

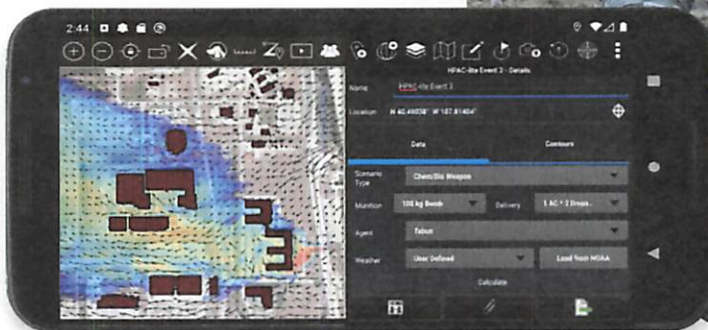


Figure 5. Prototype CBRN Effects plug-in. Photo courtesy of DTRA.

Warfighters positively evaluated the Filter Times and other CBRN plug-ins at the 2019 Chemical and Biological Operational Analysis (CBOA) event, where warfighters evaluated several technology prototypes for their utility in chemical and biological defense. Warfighters reported that the CBRN capabilities in ATAK are useful and easy to use with minimal training.

Overall, the U.S. armed forces and their interagency and coalition partners value ATAK and the common operating picture it provides. DTRA continues to develop CBRN-specific plug-in capabilities to support warfighters on the battlefield. ●

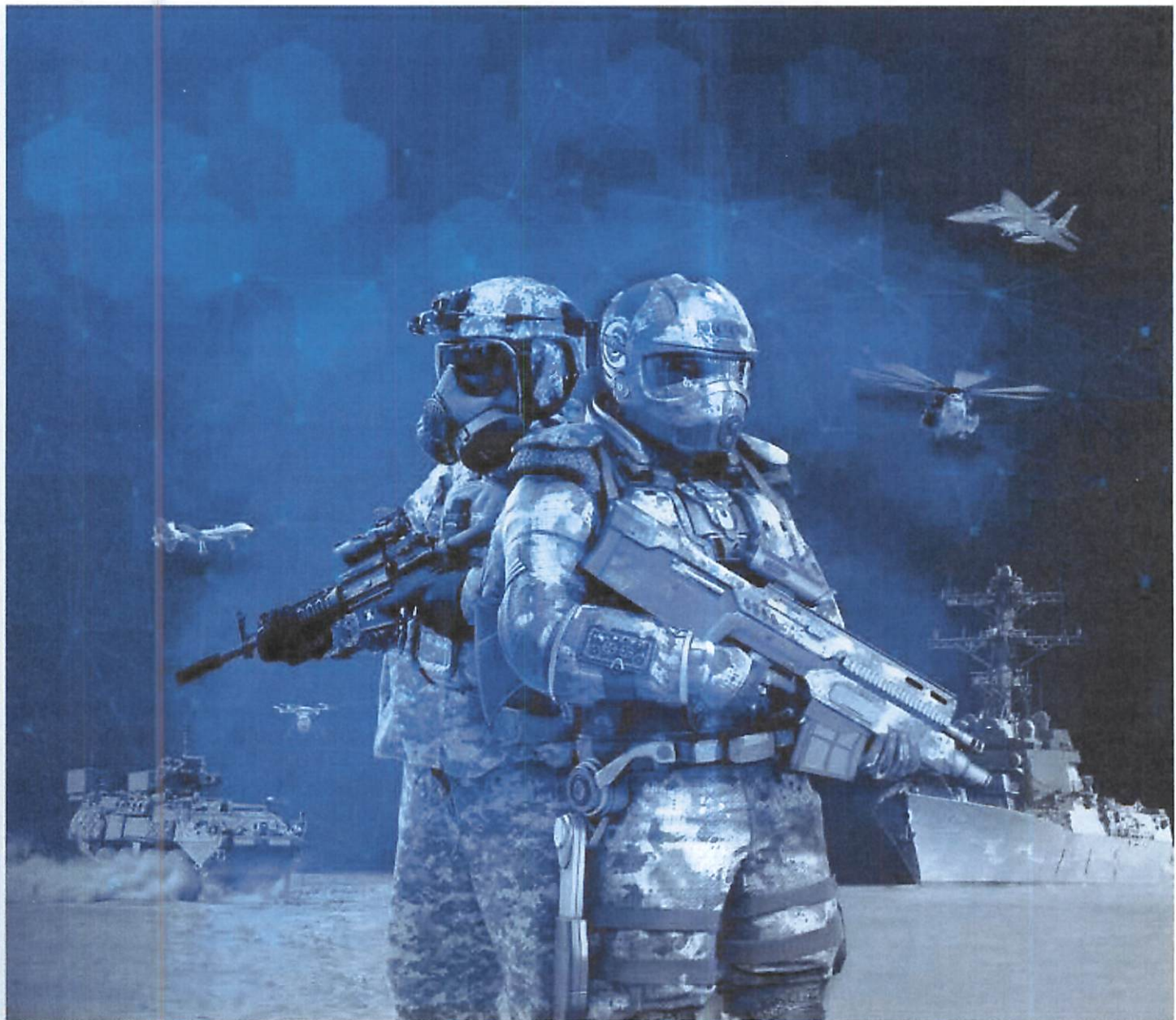


This publication highlights the Defense Threat Reduction Agency's advancements in protecting warfighters and citizens from chemical and biological threats through the innovative application of science and technology. [DTRA.mil](https://www.dtra.mil)

Exhibit C



JPEO-CBRND CAPABILITIES CATALOG 2024



JOINT PROGRAM EXECUTIVE OFFICE FOR CHEMICAL,
BIOLOGICAL, RADIOLOGICAL AND NUCLEAR DEFENSE



JPEO-CBRND MISSION AND VISION



OUR MISSION

Provide integrated layered chemical, biological, radiological, and nuclear defense capabilities to the Joint Force across Combined Joint All-Domain Operations



OUR VISION

A resilient Joint Force enabled to fight and win unencumbered by a chemical, biological, radiological, or nuclear environment; championed by innovative, agile, results-oriented acquisition professionals.

JOINT PROJECT MANAGER (JPM) AND JOINT PROJECT LEAD (JPL) DESCRIPTIONS



JPM CBRN PROTECTION

JPM CBRN Protection develops, fields and sustains CBRN protection and mitigation capabilities for the warfighter and the Nation. They develop next-generation physical protection capabilities, like masks and suits, that reduce physiological burden and enhance protection against emerging threats. JPM CBRN Protection also develops contamination mitigation technologies, including decontamination systems, to significantly decrease the time and materials required to decontaminate personnel and equipment.



JPM CBRN MEDICAL

JPM CBRN Medical facilitates the advanced development and acquisition of medical solutions, such as nerve agent antidotes and diagnostic systems, to combat CBRN and emerging threats. They deliver safe, effective, and affordable medical solutions to counter threats and enable the Joint Force to fight and win in any denied environment. JPM CBRN Medical products span the continuum of medical care, providing an integrated layered medical defense, to include prevention, diagnosis, and treatment.



JPM CBRN SENSORS

JPM CBRN Sensors develops, fields and sustains CBRN sensors, reconnaissance systems, and mobile laboratory capabilities. They provide integrated early warning by bringing together the products in their portfolio along with robotics and autonomous systems, decision support tools, machine learning and artificial intelligence to provide situational awareness and understanding of CBRN threats.



JPM CBRN SPECIAL OPERATIONS FORCES

JPM CBRN SOF rapidly acquires and equips Special Operations and Special Purpose Forces with critical CBRN defense equipment necessary for mission success. Their focus is to further develop crucial technologies necessary for survival and unimpeded operations in denied CBRN environments. These technologies are transitioned to other Programs of Record as appropriate to enhance the capability of the Joint Force.



JPL CBRN INTEGRATION

JPL CBRN Integration is responsible for the total lifecycle of enterprise information technology systems and provides enterprise-wide CBRN threat warning and reporting, hazard prediction, and decision support capabilities for the collection, analysis, and dissemination of CBRN defense information. These capabilities provide commanders with more complete situational understanding of all the threats in the battlespace by integrating CBRN defense systems with traditional defense systems.



JPL CBRND ENABLING BIOTECHNOLOGIES

JPL CBRND Enabling Biotechnologies enables the rapid development, manufacture, and fielding of safe and effective medical solutions across the full product spectrum, including development, clinical trials, manufacturing, and validated biological threat detection materials. These solutions support programs across the JPEO-CBRND portfolio by lowering product development risks and accelerating product maturity.



JOINT PROJECT MANAGER CBRN PROTECTION

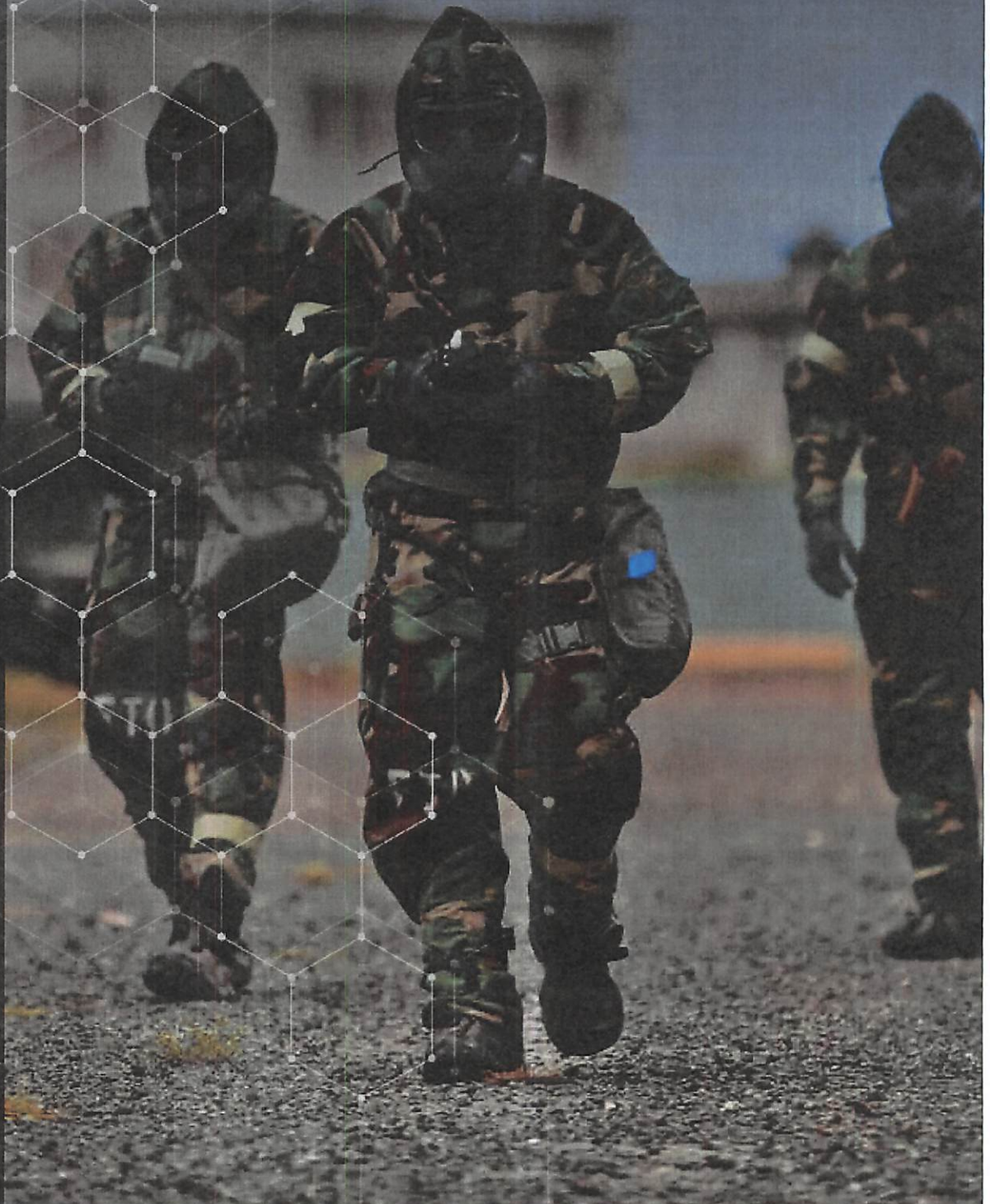
CAPABILITIES





JOINT PROJECT MANAGER CBRN SENSORS

CAPABILITIES



JPM CBRN SENSORS

**AAF Pathway:**

Major Capability Acquisition (MCA)

Acquisition Category:

ACAT III

Acquisition Phase:

Production & Deployment (P&D)

Aerosol Vapor Chemical Agent Detector (AVCAD)

Description: Aerosol Vapor Chemical Agent Detector (AVCAD) is filling critical gaps in current Joint Force chemical sensor capabilities, in the areas of liquid, solid and dusty aerosol Chemical Warfare Agent detection, and detection of specific advanced threats/Non-Traditional Agents.

Benefits to Warfighter: AVCAD provides a man-portable, sensitive aerosol and vapor chemical detection capability.

Contractor(s):

- Smiths Detection Inc. (Prime)

Program Status:

- FY14: Milestone A
- FY18: Milestone B
- FY23: Milestone C

Projected Activities:

- FY27: Initial Operational Capability
- FY32: Full Operational Capability

**AAF Pathway:**

Major Capability Acquisition (MCA)

Acquisition Category:

ACAT III

Acquisition Phase:

Operations & Support (O&S)

Analytical Laboratory System Modification (ALS MOD)

Description: Analytical Laboratory System Modification (ALS MOD) addresses critical analytical equipment obsolescence and system functionality for NGB WMD-CSTs. It is modular, scalable, and adaptable to various environmental conditions and supports the specific mission of CONOPS.

Benefits to Warfighter: The ALS MWO addresses ALS Increment 1 obsolescence issues and will optimize the Warfighter's ability to analyze data by providing enhanced human factors and engineering controls, a larger shelter and work space, upgraded software, larger databases to help identify unknowns, and improved process flow integration.

Program Status:

- FY23: Full Operational Capability

JPM CBRN SENSORS

**AAF Pathway:**

Major Capability Acquisition (MCA)

Acquisition Category:

ACAT II

Acquisition Phase:

Production & Deployment (P&D)

Chemical Biological Radiological Nuclear Dismounted Reconnaissance Systems (CBRN DRS)

Description: CBRN Dismounted Reconnaissance System (CBRN DRS) provides CBRN and EOD Warfighters with a comprehensive suite of detection/identification, protection, sample collection, hazard marking, decontamination, and support capabilities during dismounted reconnaissance, sensitive site assessment and render safe missions.

Benefits to Warfighter: CBRN DR SKO provides a comprehensive, all-hazards dismounted reconnaissance and site assessment capability to protect against, detect, and decontaminate chemical warfare agents, biological warfare agents, toxic industrial chemicals, and other hazards. SMPs will provide enhanced detection, protection, and situational awareness.

Contractor(s):

- FLIR DETECTION, INC. (Prime)
- L2 Defense, Inc.

Program Status:

- FY11: Milestone B
- FY13: Milestone C
- FY22: Full Operational Capability

Projected Activities:

- FY24: Full Operational Capability

**AAF Pathway:**

Major Capability Acquisition (MCA)

Acquisition Category:

ACAT IV

Acquisition Phase:

Pre-Materiel Solution Analysis (Pre-MSA)

Chemical Indicator (CIND)

Description: The Colorimetric Indicator (C-IND) provides low-burden, higher confidence liquid, solid and vapor hazard detection capabilities for traditional and emerging chemical hazards.

Projected Activities:

- FY25: Milestone A
- FY27: Milestone B

JPM CBRN SENSORS



AAF Pathway:
Major Capability Acquisition (MCA)

Acquisition Category:
ACAT III

Acquisition Phase:
Production & Deployment (P&D)

Common Analytical Laboratory System Field Confirmatory Analytical Capability Set (CALS FC ACS)

Description: Common Analytical Laboratory System Field Confirmatory Analytical Capability Set (CALS FC ACS) is a common suite of CB COTS/GOTS to support DoD field analytic units. FC ACS results will assist and/or support Commanders or local authority decisions on protection, treatment, decontamination and planning of future operations.

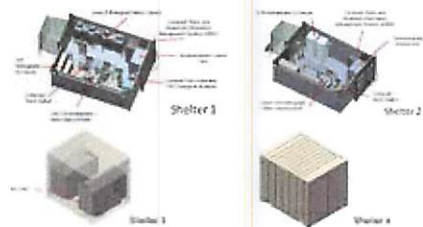
Benefits to Warfighter: Information produced by FC ACS will assist commanders or the local authority with managing and mitigating the effects of a CBR attack or disaster by providing the ability to rapidly develop a common operating picture to determine the appropriate course of action.

Program Status:

- FY17: Milestone C

Projected Activities:

- FY26: Initial Operational Capability
- FY27: Full Operational Capability



AAF Pathway:
Major Capability Acquisition (MCA)

Acquisition Category:
ACAT III

Acquisition Phase:
Production & Deployment (P&D)

Common Analytical Laboratory System Theater Validation Integrated System (CALS TV IS)

Description: Common Analytical Laboratory System Theater Validation Integrated System (CALS TV IS) integrates a common suite of CB COTS/GOTS to provide a common, modular, and transportable/mobile system to support USA AML and CARA Units and provide a high level of confidence in results via orthogonal technologies and expanded suite.

Benefits to Warfighter: The CALS TVIS will optimize the Warfighter's ability to analyze environmental samples by providing a mobile laboratory capable of providing Theater Validation results against Chemical and Biological threats. The system includes two large shelters, which gives the user ample space to perform sample collection and analysis. The system includes two large shelters, which gives the user ample space to perform sample collection and analysis. The system includes two large shelters, which gives the user ample space to perform sample collection and analysis.

Program Status:

- FY20: Milestone C

JPM CBRN SENSORS



Compact Vapor Chemical Agent Detector (CVCAD)

Description: Compact Vapor Chemical Agent Detector (CVCAD) is a man-worn, mounted, or unmanned robotic capability for the detection of chemical hazards.

Benefits to Warfighter: CVCAD alerts Warfighters to the presence of chemical vapor hazards and is applicable to man-worn and unmanned applications.

Contractor(s):

- Collins Aerospace
- FLIR DETECTION, INC.

- General Electric
- N5 Sensors, Inc

Program Status:

- FY14: Milestone A

Projected Activities:

- FY24: Milestone B

AAF Pathway:

Major Capability Acquisition (MCA)

Acquisition Category:

ACAT III

Acquisition Phase:

Technology Maturation & Risk Reduction (TMRR)



Enhanced Maritime Biological Detection (EMBD)

Description: EMBD is a technology refresh to the JBPDS for the USN. It will provide an automated biological point detection capability to detect, collect & identify biological warfare agents and improved detection capability while increasing reliability and maintainability and lowering support costs over JBPDS.

Benefits to Warfighter: Enhanced Maritime Biological Detection (EMBD) is a next generation biological detection capability being fielded to the US Navy. EMBD increases the probability of detection of BWAs, reduces false alarms, reduces hardware failure rates and increases system reliability, availability and maintainability. EMBD's improved detection sensitivity and background discrimination provides the Navy the ability to "detect to inform" which will reduce the number of contaminated ships and minimize casualties.

Contractor(s):

- Chemring Sensors and Electronic Systems, Inc. (Prime)

Program Status:

- FY18: Milestone B
- FY20: Milestone C
- FY23: Initial Operational Capability

Projected Activities:

- FY28: Full Operational Capability

AAF Pathway:

Major Capability Acquisition (MCA)

Acquisition Category:

ACAT III

Acquisition Phase:

Production & Deployment (P&D)

JPM CBRN SENSORS

**AAF Pathway:**

Major Capability Acquisition (MCA)

Acquisition Category:

ACAT II

Acquisition Phase:

Production & Deployment (P&D)

Joint Biological Tactical Detection System (JBTDS)

Description: Joint Biological Tactical Detection System (JBTDS) provides the Joint Warfighter detection, collection, and identification capability of Biological Warfare Agent (BWA) aerosols to enhance battle space awareness, protect and preserve the forces, and support time sensitive force protection decisions.

Benefits to Warfighter: The JBTDS' ability to detect, collect, and identify biological warfare agents at very low concentrations gives Warfighters additional time to make decisions and take action to prevent or reduce the risk of exposure. Gold-standard molecular technology provides field confirmatory bioagent identification, enabling Commanders to rapidly support battlespace decisions.

Contractor(s):

- CHEMRING SENSORS AND ELECTRONIC SYSTEMS, INC. (Prime)
- MRIGLOBAL (Prime)
- BIOMEME, INC.

Program Status:

- FY11: Milestone A
- FY14: Milestone B
- FY23: Milestone C

Projected Activities:

- FY29: Initial Operational Capability
- FY32: Full Operational Capability

**AAF Pathway:**

Major Capability Acquisition (MCA)

Acquisition Category:

ACAT III

Acquisition Phase:

Production & Deployment (P&D)

Joint Personal Dosimeter-Individual (JPD-I)

Description: The Joint Personal Dosimeter-Individual (JPD-I) is intended to replace DoDs legacy dosimeters (the Navys IM-270 and the Armys PDR-75 Series Systems). The JPD will provide a sensor to record and retrieve a Service members radiation exposure from occupational to tactical levels.

Benefits to Warfighter: JPD-I will support radiological defense missions, which include detecting and tracking the accumulated total dose an individual receives from ionizing radiation and recorded in the individuals' medical records. JPD-I provides near real time indication of total absorbed dose to the individual without the need to use a separate reader. Capable to achieve National Voluntary Laboratory Accreditation Program (NVLAP) to obtain Dose of Record for Warfighter's Medical Records.

Contractor(s):

- Mirion Technologies, Inc (Prime)

Program Status:

- FY17: Milestone C
- FY23: Initial Operational Capability

Projected Activities:

- FY32: Full Operational Capability

JPM CBRN SENSORS

**AAF Pathway:**

Major Capability Acquisition (MCA)

Acquisition Category:

ACAT III

Acquisition Phase:

Production & Deployment (P&D)

Man-portable Radiological Detection System (MRDS)

Description: Man-portable Radiological Detection System (MRDS) increases capabilities to detect, localize, presumptively identify, and field-confirm the presence of Special Nuclear Material. It is networked to provide near real-time, tactical level situational awareness during CWMD Interdiction and Elimination operations.

Benefits to Warfighter: MRDS increases the Warfighter's awareness of radiological threats at the tactical level.

Contractor(s):

- Advanced Measurement Technology, Inc. (Prime)
- Leidos (Prime)
- Bruker Detection Corp. (Prime)
- Interfuzee (Prime)

Program Status:

- FY18: Milestone C
- FY23: Full Rate Production

Projected Activities:

- FY24: Initial Operational Capability
- FY31: Full Operational Capability

**AAF Pathway:**

Major Capability Acquisition (MCA)

Acquisition Category:

ACAT IV

Acquisition Phase:

Pre-Materiel Solution Analysis (Pre-MSA)

Non-targeted Sequencing Identification System (NSIS)

Description: Non-Targeted Sequencing Identification System (NSIS) will provide the National Guard with a Metagenomic Sequencing capability within their WMD-CST formations.

Projected Activities:

- FY25: Milestone B
- FY27: Initial Operational Capability
- FY28: Full Operational Capability

JPM CBRN SENSORS



Nuclear Biological Chemical Reconnaissance Vehicle Sensor Suite Upgrade (NBCRV SSU)

Description: NBC Reconnaissance Vehicle Sensor Suite Upgrade (NBCRV SSU) provides maneuver formations the ability to conduct mounted reconnaissance and surveillance missions of CBRN named areas of interest (NAIs).

Contractor(s):

- ADVANCED TECHNOLOGY INTERNATIONAL (Prime)
- L2 Defense, Inc.
- MRIGLOBAL

Projected Activities:

- FY28: Initial Operational Capability
- FY42: Full Operational Capability

AAF Pathway:

Major Capability Acquisition (MCA)

Acquisition Category:

ACAT II

Acquisition Phase:

Engineering & Manufacturing Development (EMD)



Radio Isotope Identification Detector (RIID)

Description: Radio Isotope Identification Detector (RIID) is a Family of handheld, ruggedized, and networked RIIDs that use different COTS technologies to locate, identify, and characterize radiological and nuclear (RN) material, including special nuclear materials.

Contractor(s):

- SYMETRICA INC. (Prime)

Program Status:

- FY19: Milestone A
- FY22: Initial Operational Capability
- FY22: Milestone C

Projected Activities:

- FY27: Full Operational Capability

AAF Pathway:

Major Capability Acquisition (MCA)

Acquisition Category:

ACAT III

Acquisition Phase:

Production & Deployment (P&D)

JPM CBRN SENSORS



Radiological Detection System (RDS)

Description: Radiological Detection System (RDS) provides a standard DoD RDS that will replace the current radiation detection, indication, and computation (RADIAC) systems (AN/PDR-77, AN/VDR-2, ADM-300, and MFR Suite) used by the Joint Services and consolidate the capabilities into one joint solution.

Benefits to Warfighter: The RDS will provide Warfighters with an understanding of their total exposure to various types of radiation.

Contractor(s):

- Visionary Products Inc. (Prime)

Program Status:

- FY14: Milestone A
- FY23: Milestone C

AAF Pathway:

Major Capability Acquisition (MCA)

Acquisition Category:

ACAT III

Acquisition Phase:

Production & Deployment (P&D)



Screening Obscuration Module (SOM)

Description: Screening Obscuration Module (SOM) is a modular medium-area and duration screening obscuration capability that is located at the small element level of conventional force units and is employed at the tactical in a mounted or dismounted configuration.

Benefits to Warfighter: -Increases Soldier and Platform Survivability.

-Degrades the enemy's ability to detect US targets.

-Supports Mounted and Dismounted units

Contractor(s):

- L3HARRIS TECHNOLOGIES, INC. (Prime)

Program Status:

- FY06: Milestone A
- FY22: Milestone C

Projected Activities:

- FY24: Full Operational Capability
- FY24: Initial Operational Capability

AAF Pathway:

Major Capability Acquisition (MCA)

Acquisition Category:

ACAT III

Acquisition Phase:

Production & Deployment (P&D)



JOINT PROJECT MANAGER CBRN SPECIAL OPERATIONS FORCES

CAPABILITIES



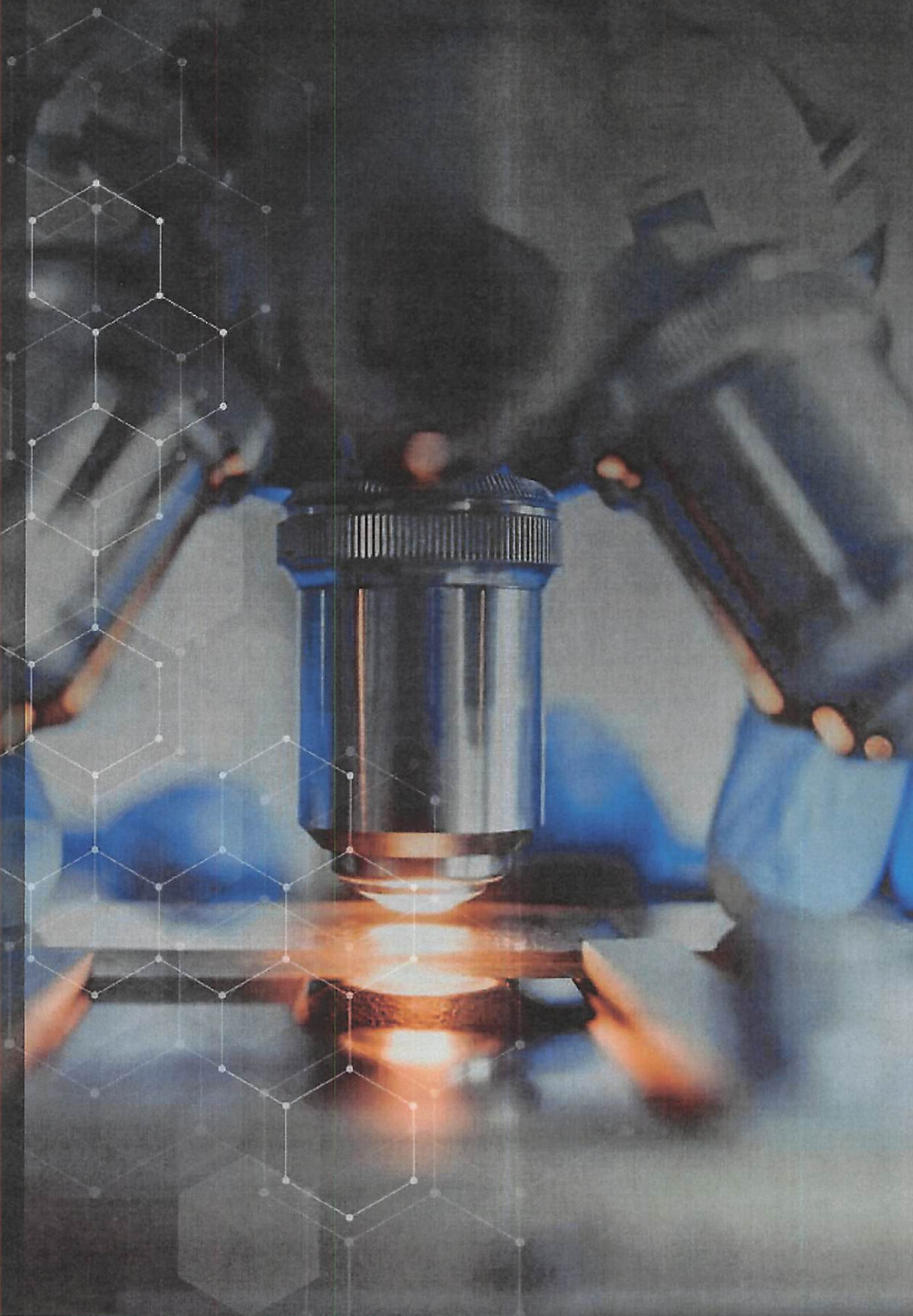
JOINT PROJECT LEAD CBRN INTEGRATION

CAPABILITIES



JOINT PROJECT LEAD CBRND ENABLING BIOTECHNOLOGIES

CAPABILITIES



ACRONYM	DEFINITION
AA-ENBD	Accelerated Antibodies - Enhanced Biological Defense
AAF	Adaptive Acquisition Framework
AAL	Additional Authorized List
AAS	Advanced Anticonvulsant System
ACAA	Automatic Chemical Agent Alarm
ACADA	Automatic Chemical Agent Detector Alarm
ADD	Advanced Differential Diagnostics
ADS	Autonomous Decontamination System
ALS	Analytical Laboratory System
ALS MOD	Analytical Laboratory System Modification
APR	Air Purifying Respirator
ASPIRE	Advanced System for Protection and Integrated Reduction of Encumbrances
ASPIRE-ENBD	Advanced System for Protection and Integration Reduction of Encumbrances - Enhanced Biological Defense
AV TX	Antiviral Therapeutics
AVCAD	Aerosol Vapor Chemical Agent Detector
AVO TX	Antiviral Oral Therapeutics Program
BCIS-ENBD	Biological Containment Isolation System - Enhanced Biological Defense
BIDS	Biological Integrated Detection System
BOT MAB	Botulinum Monoclonal Antibodies
BOT TX	Botulinum Toxin Therapeutic
BWA	Biological Warfare Agent
CALS FC ACS	Common Analytical Laboratory System Field Confirmatory Analytical Capability Set
CALS TV IS	Common Analytical Laboratory System Theater Validation Integrated System
CANA	Convulsive Antidote for Nerve Agents
CASB	Chemical Biological Aircraft Survivability Barrier
CB	Chemical Biological
CB-AAM	Chemical-Biological Apache Aviator Mask
CB COTS/GOTS	Chemical Biological Commercial Off-The-Shelf/Government Off-The-Shelf
CBM	Chemical-Biological Mask System
CBDP	Chemical and Biological Defense Program
CBIPR ADM	Chemical Biological Incident Preparedness and Response Advanced Design Manufacturing
CBPS	Chemical and Biological Protective Shelter
CBRN	Chemical, Biological, Radiological and Nuclear
CBRND	Chemical, Biological, Radiological and Nuclear Defense
CBRN DRS	Chemical, Biological, Radiological Nuclear Dismounted Reconnaissance Systems
CEDS	Critical Equipment Decontamination System
CHRS	Contaminated Human Remains System
CIND	Chemical Indicator
COVID VAC	Validated Nucleic Acid Vaccine Construction
CP DEPMEDS	Chemically Protected Deployable Medical System
CPFH	Collectively Protected Field Hospital
CPG	Clinical Practice Guideline

ACRONYM	DEFINITION
CRESS	Chemical Reconnaissance and Explosives Screening Set
CSC2	Chemical Biological Radiological Nuclear Support to Command & Control
CVCAD	Compact Vapor Chemical Agent Detector
CWMD	Countering Weapons of Mass Destruction
DBPAP	Defense Biological Product Assurance Program
DFoS GPD	Decontamination Family of Systems General Purpose Decontaminant
DFoS JSEW	Decontamination Family of Systems Joint Service Equipment Wipe
DFU	Dry Filter Unit
EMBD	Enhanced Maritime Biological Detection
EMD	Engineering & Manufacturing Development
EOD	Explosive Ordnance Disposal
FAMS-S-RP	Forward Area Mobility Spray System - Rapid Prototyping
FDA	Food and Drug Administration
FGA	Fourth Generation Agents
GUIDE-ENBD	Generative Unconstrained Intelligent Drug Engineering - Enhanced Biological Defense
HED	Human Effective Dose
ICAM	Improved Chemical Agent Monitor
JACKS DBS	Joint Acquisition Chemical Biological Knowledge System Defense Business System
JBADS	Joint Biological Agent Decontamination System
JBPDS	Joint Biological Point Detection System
JBTDS	Joint Biological Tactical Detection System
JC3	Joint Service Chem/Bio Coverall for Combat Vehicle Crewmen
JCAD	Joint Chemical Agent Detector
JCAD SLA	Joint Chemical Agent Detector Solid Liquid Adapter
JCBRAWM	Joint Chemical Biological Radiological Agent Water Monitor
JECP	Joint Expeditionary Collective Protection
JEM	Joint Effects Model
JHBI	Joint Handheld Bio-Agent Identifier
JPACE	Joint Protective Aircrew Ensemble
JPD-I	Joint Personal Dosimeter-Individual
JPEO-CBRND	Joint Program Executive Officer for Chemical, Biological, Radiological and Nuclear Defense
JPL	Joint Project Lead
JPM	Joint Project Manager
JSAM Apache	Joint Service Aircrew Mask Apache
JSAM RW	Joint Service Aircrew Mask Rotary Wing
JSAM SA	Joint Service Aircrew Mask Strategic Aircraft
JSAM TA	Joint Service Aircrew Mask Tactical Aircraft
JSCESM	Joint Service Chemical Environmental Survivability Mask
JSEW	Joint Service Equipment Wipe
JSGPM	Joint Service General Purpose Mask
JSGPM M53A1	Joint Service General Purpose Mask M53A1
JSLIST	Joint Service Lightweight Integrated Suit Technology

FY24

ACRONYM	DEFINITION
JSLIST AFS	Joint Service Lightweight Integrated Suit Technology - Alternative Footwear Solutions
JSLIST IFS	Joint Service Lightweight Integrated Suit Technology Integrated Footwear System
JSLIST JB1GU FR	Joint Service Lightweight Integrated Suit Technology Block 1 Glove Upgrade Flame Resistant
JSLIST JB1GU nFR	Joint Service Lightweight Integrated Suit Technology Block 1 Glove Upgrade Non-Flame Resistant
JSTDS SS	Joint Service Transportable Decon System Small Scale
JWARN	Joint Warning and Reporting Network
LVOSS	Light Vehicle Obscuration Smoke System
mAb	Monoclonal Antibody
MCA	Major Capability Acquisition
MCM	Medical Countermeasure
MCM MFRO	Medical Countermeasures Manufacturing Optimization
MCMPPT	Medical Countermeasure Platform Technologies
MFK	Mobile Field Kit
MOD MED	Modernization Medical
MOPP	Mission Oriented Protective Posture
MPD	Mass Personnel Decontamination
MRDS	Man-Portable Radiological Detection System
MSA	Materiel Solution Analysis
MTA	Middle Tier of Acquisition
NA	Nerve Agent
NAIs	Named Areas of Interest
NBCRV SSU	Nuclear Biological Chemical Reconnaissance Vehicle Sensor Suite Upgrade
NGB	National Guard Bureau
NGB WMD-CSTs	National Guard Bureau Weapons of Mass Destruction Civil Support Team
NGDS	Next Generation Diagnostic System
NGDS 2 ChemDX	Next Generation Diagnostics System 2 Chemical Diagnostics
NGDS 2 MPDS	Next Generation Diagnostics System 2-Man Portable Diagnostic System
NIOSH	National Institute for Occupational Safety and Health
NON MED PPE	Non Medical Personal Protective Equipment
NSIS	Non-Targeted Sequencing Identification System
NTA	Non-Traditional Agent
NVLAP	National Voluntary Laboratory Accreditation Program
O&S	Operations & Support
P&D	Production & Deployment
PAPR	Powered Air Purifying Respirator
PATS	Protective Assessment Test System
PBA	Pharmaceutical Based Agent
PCR	Polymerase Chain Reaction
PLG MAB	Plague Monoclonal Antibodies
POM	Program Objective Memorandum
POR	Programs of Record
PPE	Personal Protective Equipment

ACRONYM	DEFINITION
PPTS-ENBD	Portable Patient Transport System - Enhanced Biological Defense
RADIAC	Radiation Detection, Indication and Computation
RAPID	Rapid Access to Products in Development
RDS	Radiological Detection System
RIID	Radio Isotope Identification Detector
RN	Radiological and Nuclear
RNATS	Reactivating Nerve Agent Treatment System
ROCS	Rapid Opioid Countermeasure System
RSDL	Reactive Skin Decontamination Lotion
S&T	Science & Technology
SCBA	Self Contained Breathing Apparatus
SEDS	Service Equipment Decontamination System
SIS	Shipboard Isolation System
SLA	Solid Liquid Adapter
SMP	Series Mask Program
sNDA	Supplemental New Drug Application
SOD-Vr	Screening Obscuration Devices - Visual Restricted Terrain
SOF	Special Operations Forces
SOM	Screening Obscuration Module
SPCHAR-ENBD	Surveillance and Pathogen Characterization - Enhanced Biological Defense
SPU RCDD	Special Purpose Unit Rapid Capability Development and Deployment
SPX AV PEP	Smallpox Antiviral Post-Exposure Prophylaxis
TATPE	Tactical Advanced Threat Protective Ensemble
TCMS	Tactical Contamination Mitigation System
TMRR	Technology Maturation & Risk Reduction
UCS	Unified Command Suite
UI	User Interface
UIPE	Uniform Integrated Protection Ensemble
UIPE FoS	Uniform Integrated Protection Ensemble Family of Systems
UIPE FoS Gloves - RP	Uniform Integrated Protection Ensemble Family of Systems Glovers - Rapid Prototyping
UIPE FoS GP	Uniform Integrated Protection Ensemble Family of Systems General Purpose
USA	U.S. Army
USAF	U.S. Air Force
USMC	U.S. Marine Corps
USN	U.S. Navy
USSOCOM	U.S. Special Operations Command
VAMP	Vaccine Acceleration by Modular Progression
VAMP-ENBD	Vaccine Acceleration by Modular Progression - Enhanced Biodefense
VSST	Vaccine Storage and Stability Testing
WMD-CST	Weapons of Mass Destruction Civil Support Team



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